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ABSTRACT

The fundamental thrust of counseling for individual learning styles is eclectic; it provides a strong rationale for selecting counseling approaches which will enhance counselee learning and growth. Therefore, the learning style model needs to be introduced to graduate students and practicing counselors after they are thoroughly knowledgeable concerning existing theories, techniques, and the basic tenets of counseling. The major purpose of this book is to provide counselors in elementary and secondary schools with information on learning styles to enable them to diagnose the learning style of each student, utilize counseling interventions that complement individual learning style preferences, and consult with teachers about accommodating student learning preferences in the classroom. These topics are covered: (1) increasing counselor effectiveness through individual learning style identification; (2) prescribing counseling interventions based on learning styles; (3) consulting with classroom teachers and parents regarding learning styles; and (4) research on learning styles. (Research on learning styles in the areas of teaching, learning, and counseling is reviewed and appended.) (BHK)

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Learning Styles Counseling

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Introduction

It is with great pleasure that we welcome Dr. Shirley Griggs, a distinguished and productive scholar, to the crème de la crème series. As an early pioneer in the learning styles area, she increased counselor's awareness of the importance of relating counseling to the learning styles of their clients. By doing so, she helped to make counseling more responsive to the needs of clients and enhanced the tools available to counselors.

To become a crème de la crème publication a volume must meet two stringent criteria: first, it must have a sound theoretical foundation; second, it must provide evidence of field validation—successful use by practitioners in a variety of settings. On both of these criteria Shirley Grigg's *Learning Styles Counseling* earns high marks. It draws from a rich theoretical and research foundation and is replete with examples and illustrations of use by varied practitioners in the field.

Learning Styles Counseling is an expanded and updated new edition of one of ERIC/CAPS's all-time bestsellers, *Counseling Students Through Their Individual Learning Styles*. One of the reasons we are so pleased to introduce it to the crème de la crème series is that it is not just "another book about counseling," but one that offers a new and refreshing way for us to enhance the effectiveness of our counseling.

Our previous crème de la crème volumes have received an enthusiastic reception. Counselors are using *Comprehensive Guidance Programs That Work* by Norm Gysbers, *The Teacher Advisor Program* by

Bob and Linda Myrick, and *Invitational Learning for Counseling and Development* by Bill Purkey, and reporting excellent results.

I have no doubt that counselors will find Dr. Grigg's monograph equally rewarding to have and to use.

Garry R. Walz
Director, ERIC/CAPS

About the Author

Shirley A. Griggs, Ed.D., is Professor of Counselor Education at St. John's University in Jamaica, New York. Formerly she was a high school counselor and an assistant principal of pupil personnel services for the Detroit Public Schools. She is experienced in educational program evaluation and has served as study director at the Human Affairs Research Center and the Urban Center for Research in New York City, and as a consultant-evaluator for the New York City Public Schools.

Dr. Griggs has published over 45 articles on school dropouts, child abuse, adolescent pregnancy, death education, gifted and talented students, and counseling for learning styles. She has worked as assistant editor of *The School Counselor* and consulting editor of the *Journal of Counseling and Development*.

In 1968, she received the Distinguished Service Award of the American Association of Counseling and Development and is a member of the American School Counselors Association, Association for Counselor Education and Supervision, American Rehabilitation Counseling Association, Association for Specialists in Group Work, and Division 17 of the American Psychological Association. She is listed in over 14 biographical publications, including Marquis' *Who's Who in American Women*. In 1985, she received the President's Medal (St. John's University) for Outstanding Faculty Achievement, and in 1989 and 1990, the Merit Award for Faculty Achievement.

Preface

As a counselor educator, I have witnessed the vast increase in the number of counseling theories and techniques over the past decade. The challenge of teaching courses in counseling and supervising graduate students in practicum and internship is to help them **integrate** existing techniques/strategies/interventions into a meaningful whole—a gestalt that provides a rationale for the practicing counselor. *Counseling for Individual Learning Styles* provides a model for integrating existing theory, beginning with an assessment of individual needs and identifying a variety of counseling approaches that are compatible with those individual learning style preferences. As such, it is a tool for selecting appropriate counseling interventions and recognizes the validity of the vast array of counseling theories, but maintains that no single approach can meet the needs of all counselees. The fundamental thrust of counseling for individual learning styles is eclectic; it provides a strong rationale for selecting counseling approaches which will enhance counselee learning and growth. Therefore, the learning style model needs to be introduced to graduate students and practicing counselors after they are thoroughly knowledgeable concerning existing theories, techniques, and the basic tenets of counseling.

The major purpose of this book is to provide counselors in elementary and secondary schools with information on learning styles to enable them to diagnose the learning style of each student, utilize counseling interventions that complement individual learning style preferences, and consult with teachers

about accommodating student learning preferences in the classroom. The learning objectives are as follows:

1. To review the major learning style theories with counseling applications.
2. To increase counselor effectiveness through individual learning style identification and prescription.
3. To provide counselors with a schema for matching counseling techniques with the learning style preferences of students.
4. To describe selected school programs that use learning styles in counseling.
5. To outline consultation strategies to use with classroom teachers.
6. To evaluate the impact of using the learning styles approach in teaching and counseling.

This book could not have been completed without the assistance of personal friends and professional colleagues: Rita Dunn, Kenneth Dunn, and Gary Price were the pioneers in developing the learning style model and the assessment tools. My graduate students and practicing school counselors across the nation have helped to develop creative and innovative ways to apply the learning style model in their counseling practice. Dr. Garry Walz and Penny Schreiber, director and editor of ERIC/CAPS, respectively, offered their expertise at every point along the way in the development of the book. My thanks and appreciation to all of these educators and counselors, and particularly to Rita Dunn, who has served as a mentor, role model, and friend.

Shirley A. Griggs
St. John's University

Chapter 1

Increasing Counselor Effectiveness Through Individual Learning Style Identification

School counseling programs are in a state of crisis. Many school districts across the nation are experiencing fiscal cutbacks due to decreased federal allocations to education, economic recession, and urban budget deficits. As superintendents of schools and local school boards of education review budgets, frequently the first area reduced is pupil personnel services. Increasingly, school counselors are facing accountability issues: They need to demonstrate that their programs and services make a difference in the lives of young students.

School counseling programs are in a state of crisis.

Increasingly, school counselors are facing accountability issues: They need to demonstrate that their programs and services make a difference in the lives of young students.

The paradox is that fewer school counselors are faced with increasing student crises and problems. Rapid societal changes, family disruption, economic uncertainty, conflict in many areas of the world, and increased crime are translated into more student unrest, frequently in the form of discipline problems, alienated youth, violence, teenage pregnancies, depression, suicide, substance abuse, and school dropouts.

Futurists predict that as the rate of societal change escalates, the complexity of problems faced by individuals will increase so that helping professionals will not exist in adequate numbers to handle the crises. To ameliorate these personal crises,

counselors of the future will serve predominantly as consultants, identifying and training peer helpers. Thus, students who have abused alcohol or other substances and have effectively worked through their problems to become drug-free, will be trained by helping professionals to assist students who are currently experimenting with and abusing harmful substances. On a societal level, many of these self-help groups are in operation, including Recovery Incorporated, Alcoholics Anonymous, widow-to-widow programs, mastectomy groups, and suicide prevention hotlines. Within our schools, many counselors have prepared peer leaders to work in groups with other students in areas such as under-achievement, family conflict, moral development issues, and career decision making.

...the educational establishment is one of the great reactionary institutions in our society.

Diebold (1984) asserts that the educational establishment is one of the great reactionary institutions in our society. He points out that the amount of information produced doubles every ten years, but our schools continue to focus too heavily on traditional education or learning of the past, at the expense of studies that help us to understand the present and anticipate the future. The shortcomings of education in general have been addressed in *A Nation at Risk* (National Commission on Excellence in Education, 1983) and *An Imperiled Generation: Saving Urban Schools* (Carnegie Foundation, 1988).

...school counselors find themselves in ill-defined roles, without support, and vulnerable to budget reductions.

Criticism of school guidance and counseling services is found both outside and within the counseling profession. Almost two decades ago, Barnett (1972) warned that the counseling profession finds itself without an agreed upon structure of beliefs, objectives, practices, and roles with which to defend itself against possible extinction. In reviewing the status of secondary school guidance, Peer (1985) describes a bleak condition in which school counselors find themselves in ill-defined roles, without support, and vulnerable to budget reductions. Findings of a national commission on guidance and counseling

noted that too often counselors are assigned quasi-administrative duties that make inadequate use of their special skills and talents (Howe III, 1986).

Understanding the Learning Process

Increasingly, educational leaders are recognizing that the **process of learning** is critically important. Glines (1989) observed that students *can* learn, if their program needs are appropriately diagnosed and prescribed, and their development in the affective domain is addressed. The major mission of the school counselor is to help students learn to love learning (Krumboltz, 1988) and focus on the process of learning in such areas as self-concept, independence, locus of control, and attitudes toward school (Selden, 1989).

...students can learn, if their program needs are appropriately diagnosed and prescribed, and their development in the affective domain is addressed.

Understanding the way students learn is the door to educational improvement, and learning style assessment is one of the keys to an understanding of student learning. The past few decades have witnessed many innovations in our schools, including open classrooms, programmed learning, flexible scheduling, cooperative learning, computer-assisted instruction, and alternative schools. While these programs enjoyed some success, the general reaction among most practitioners was one of disappointment, because no single model appeared to be superior. Kiernan (1979) observed:

> We now see that part of the problem was the tendency to apply a single (instructional) approach to all students. That is, all students were expected to blossom under independent study or small group discussion or open classrooms, or whatever. Student learning style challenges this premise and argues for an eclectic instructional program, one based upon a variety of techniques and structures,

Student learning style...argues for an eclectic instructional program.

reflecting the different ways that individual students acquire knowledge and skills. (p.i)

...counselors need to recognize that an eclectic aproach...is the key to the counseling process.

Similarly, counselors need to recognize that an eclectic approach to helping students, based on the individual learning style characteristics of each student, is the key to the counseling process. Throughout this book, the term "counseling" is used as follows: Counseling is an interactive learning process between a professional counselor and a counselee, that facilitates the counselee's understanding of self, others, and the environment and results in positive counselee changes in attitude and behavior.

Reviewing Traditional Approaches to Counseling

...there are over 250 conceptually distinct approaches to counseling, all vying for distinction as the most effective method.

New counseling theories are proliferating at a fast rate. One count (Parloff, 1980) revealed that there are over 250 conceptually distinct approaches to counseling, all vying for distinction as the most effective method. These theories differ in terms of philosophy, major personality constructs, counseling goals, the relative importance of diagnosis, counseling techniques and strategies, and targeted clientele. Beutler (1983) asserts that what is needed is a theoretical system that is sufficiently broad to encompass both the nonspecific and unique variables inherent in numerous theories, and yet specific enough to ensure that these procedures can be applied in a reliable and maximally successful way. Hence, he argues for systematic eclecticism in counseling.

Smith (1982), in a review of the trends in counseling and psychotherapy, surveyed a representative group of practitioners to ascertain their theoretical orientation. Over 40% of the practitioners identified their orientation as eclectic, which represented a higher proportion than behavioral, psychoanalytic, Adlerian, reality, person-centered, Gestalt, cognitive,

and existential approaches combined. Similarly, Hollis and Wantz (1986) surveyed counselor preparation institutions in the United States and found that an eclectic philosophical orientation was by far the predominant one.

Thus, school counselors are exposed to a variety of theories, but there seems to be a trend toward eclecticism in counseling because it serves to integrate existing theory and provide a framework for working with individual differences. However, the vast majority of approaches, including systematic eclecticism, are "talking' therapies, designed for mature, verbally proficient, and cognitively developed individuals who are capable of indepth processing that leads to awareness, insight, and change. Relatively few counseling theories and techniques have been designed for use with children and adolescents, whose developmental needs are different from those of adults and who, consequently, require approaches that are congruent with their particular needs. Counseling based upon individual learning style preferences is such an approach, and provides an eclectic model for assessing learning styles and utilizing existing theories/techniques/interventions that are compatible with individual needs and differences.

Relatively few counseling theories and techniques have been designed for use with children and adolescents....

Understanding the Need to Assess Students' Learning Styles

Everyone has a learning style. Our style of learning, if accommodated, can result in improved attitudes toward learning and an increase in productivity, achievement, and creativity.

Readings about the lives of famous people frequently disclose elements of their learning styles. A *Time* article on Jesse Jackson (Jesse Jackson, 1984) reveals the following about learning style preferences:

Everyone has a learning style. Our style of learning, if accommodated, can result in improved attitudes toward learning....

> On the Jackson campaign, schedules are merely suggestions, and Secret Service agents joke that the candidate runs on "J.S.T."—Jesse Standard Time.
>
> The message he gave black teenagers as he toured the country...for his PUSH for Excellence program exhorted, "Down with dope! Up with hope." School children (were encouraged) to sign pledges that they would study for two hours every school night, without radio or TV. (p. 30)

The absence of time schedules suggests impulsivity and need for low structure, both elements of learning style.

The absence of time schedules suggests impulsivity and need for low structure, both elements of learning style. The encouragement for adolescents to study without radio or television probably reflects Reverend Jackson's own need for quiet while learning, another element of style.

In an article on the career of Shirley MacLaine, another issue of *Time* stated (Show Business, 1984):

> "Shirley always has had a tendency to go cosmic on small evidence, to start with the general and find specifics to buttress her belief," says Hamill.
>
> MacLaine says, "My strongest personality trait is the way I keep unsettling my life when most people are settling down."
>
> She is annoyed at being called a workaholic, which by any ordinary measure she is. (p. 62)

Selected learning style elements remain stable in individuals, such as time of day preferences and responsibility....

The tendency to start with the general is characteristic of global persons; the unsettling suggests impulsivity; and the workaholic indicates a high level of motivation, all elements of learning style.

Selected learning style elements remain stable in individuals, such as time of day preferences and responsibility, while other elements appear to follow the growth curve. In general, the younger the individual, the more important it becomes to accommodate

learning style preferences. For example, in learning the various calls in square dancing, different adults have adjusted to learning the calls through either reading a description of the call (visual), or hearing the caller explain the call (auditory), or actually being lead through the steps of doing the call (tactual-kinesthetic). Price (1980) studied 3,972 students in grades 3–12 and discovered that the younger the student, the more tactual and kinesthetic she or he was. Thus, in teaching square dance calls to young children, it would generally be preferable to use tactual-kinesthetic approaches rather than visual or auditory approaches to accommodate their perceptual preferences.

...the younger the student, the more tactual and kinesthetic she or he was.

Definition of Learning Style

A comprehensive definition of learning style was adopted by a national task force, comprised of leading theorists in the field and sponsored by the National Association of Secondary School Principals. This group defined "learning styles" as the composite of characteristic cognitive, affective, and physiological factors that serve as relatively stable indicators of how a learner perceives, interacts with, and responds to the learning environment (Keefe, 1979). Included in this comprehensive definition are "cognitive styles," which are intrinsic information-processing patterns that represent a person's typical mode of perceiving, thinking, remembering and problem solving (Messick, 1969).

Major Learning Style Models

In an attempt to provide a framework for the growing number of different learning style theories, Curry (1987) conceived the "onion model," consisting of four layers defined as follows:

- **Personality dimensions** assess the influences of basic personality on preferred approaches to acquiring and integrating information.
- **Information-processing** is the individual's preferred intellectual approach to assimilating information.
- **Social interaction** addresses how students interact in the classroom.
- **Instructional preference** is viewed as the individual's preferred environment for learning.

The core of the "onion" comprises personality traits that are relatively stable and the outermost layer, instructional preference, is largely environmentally determined. The dimensions at one level impact those of the next level. Learning style models at each level are reviewed, together with psychometric data. Assessment is viewed as central to the concept of learning style, since it implies a more personalized approach to learning and counseling, to student advisement and placement, to improvement of study skills, to successful counseling strategies, and to meaningful evaluation.

Assessment is viewed as central to the concept of learning style, since it implies a more personalized approach to learning and counseling....

Personality Models

Witkin (1954) studied the manner in which individuals perceive their environment and developed the bipolar construct of field dependence/field independence. To operationalize this construct, Witkin, Oltman, Raskin, and Karp (1971) developed the *Group Embedded Figures Test* (GEFT), which identifies persons able to recognize simple figures within complex ones (field independent) and those unable to identify the figures (field dependent). Curry (1987) concluded that *GEFT* has strong reliability and good validity evidence. It is hypothesized that persons who are heavily influenced by the surrounding field tend also to be influenced by authority

figures and their peer group, while persons who are relatively autonomous in relation to the surrounding field tend to function more independently. Evidence exists that this construct influences course selection and career interests in that field dependent persons tend to favor interpersonal areas, including the behavioral sciences and humanities, while field independent persons are attracted to analytic areas, including mathematics and science (Witkin, 1976).

Another personality model that has influenced the field of learning styles is derived from Jungian theory and includes concepts of how individuals perceive reality, relate to others, reach conclusions, and respond to life events. The *Myers-Briggs Type Indicator* (MBTI) (Myers, 1978) measures these concepts and consists of four dichotomous scales, including **extraversion** or preferring to interact with people versus **introversion** or preferring an inner world of ideas and concepts; **sensing** or preferring concrete, realistic modes of perception versus **intuition** or inferring meaning from experience and insight; **thinking** or reaching conclusions based on logical order versus **feeling** or making decisions on the basis of personal values; and **judging** with an emphasis on planning and controlling events versus **perception** with an inclination to react to events spontaneously. Curry (1987) concluded that the *MBTI* has good reliability and strong validity evidence. In a review of the literature on the *MBTI* and learning style, Lawrence (1984) cites evidence that suggests that there are different patterns of interest and motivation that intuitive types and sensing types may carry with them into learning situations. For example, sensing types prefer order, prize learning for practical use, and excel at tasks that require carefulness, thoroughness, and soundness of understanding, while intuitive types prefer autonomy, creativity, abstraction and tasks that require quickness of insight and the establishing of relationships between concepts. Spiegel (1986) hypothesized that

...there are different patterns of interest and motivation that intuitive types and sensing types may carry with them into learning situations.

intuitive and sensing types would perform better in identifying the feelings of others after receiving congruent, as opposed to incongruent, empathy training. The general trend, though not significant, was that students learned better under incongruent conditions, suggesting that sensing and intuitive types should be taught empathy skills through their non-preferred modality.

Information Processing Models

...the distinctiveness, transferability, and durability of the memories that result from learning are a direct reflection of the quality of thinking that occurs during the learning activity.

Schmeck (1983) examined the construct of cognitive complexity, arguing that the distinctiveness, transferability, and durability of the memories that result from learning are a direct reflection of the quality of thinking that occurs during the learning activity. *The Inventory of Learning Processes* (Schmeck, Ribich, & Ramanaiak, 1977) addresses this construct and is comprised of four subscales, including synthesis-analysis, elaborative processing, fact retention, and study methods. The first two subscales identify deep-elaborative versus shallow-reiterative processors. Curry (1987) concluded that the inventory has strong reliability and validity data. During a counseling session, McCarthy, Shaw, and Schmeck (1986) report that raters were able to accurately categorize deep versus shallow clients. Those clients who discussed academic problems were more likely to be classified as shallow, whereas those who discussed relationship problems were more likely to be classified as deep. Furthermore, deep-elaborative clients explored the meaning of their concerns, were more conclusion-oriented, formed hypotheses about the cause of their problems, and used interpretation, while shallow-reiterative clients were more description-oriented, less personal, and more anxious during counseling. Schmeck views the role of the counselor as facilitating the cognitive growth of the client by encouraging a deep-elaborative approach to problem resolution.

The Kolb (1984) model of information processing views individuals as entering the learning experience with preferred styles based upon: (1) method of perception on a continuum from concrete experiencing to abstract thinking and (2) system of processing information on a continuum from active to reflective. When these two dimensions of perceiving and processing are juxtaposed, four styles of learning emerge: (1) **Divergers** perceive information concretely and process it reflectively. These learners are termed imaginative because they integrate experience with the self and need to be personally engaged in the learning process. (2) **Convergers** perceive information abstractly and process it reflectively. They learn by sequential thinking and are attentive to detail and thoroughness. (3) **Assimilators** perceive information abstractly and process it actively. They are pragmatists and place a high value on skills development and problem solving. (4) **Accommodators** perceive information concretely and process it actively. They are dynamic learners, who relish change, risk taking, and flexibility.

The Kolb (1984) model of information processing views individuals as entering the learning experience with preferred styles....

The *Learning Style Inventory* (Kolb, 1976) involves rank ordering sets of four words, characteristic of each style, and is viewed by Curry (1987) as having strong reliability and fair validity evidence. McCarthy (1990) developed the 4MAT system, which integrates the information-processing system of Kolb with left-mode and right-mode brain processing. Learning is viewed as cyclical with learners initially sensing and experiencing; then watching and reflecting; then thinking and developing theories; then trying out those theories or experimenting; and lastly, evaluating and synthesizing what they have learned.

Gregorc's (1979) concept of learning styles is similar to Kolb's and maintains that individuals learn through concrete experience and abstraction either

...individuals learn through concrete experience and abstraction either randomly or sequentially.

randomly or sequentially. Similarly, he identified four styles of learning including:

- **Concrete sequential** learners prefer direct, step-by-step, orderly and sensory-based experience.
- **Concrete random** individuals use trial-and-error, intuitive, and independent approaches in learning.
- **Abstract sequential** types have strong symbolic systems and a proclivity for learning through reading and listening to rational presentations.
- **Abstract random** learners evaluate learning globally and prefer to learn information in an unstructured, experiential manner.

The *Style Delineator* (Gregorc, 1982) is comprised of ten sets of four descriptive adjectives that are rank ordered in relation to self.

Social Interaction Models

Social interaction models address the varying learning styles of individuals within the context of the classroom environment.

Social interaction models address the varying learning styles of individuals within the context of the classroom environment. The Reichmann and Grasha (1974) paradigm is representative of this approach which identifies six types of learners as follows:

1. **Independent learners** prefer to think and learn by themselves.
2. **Dependent learners** lean heavily on authority figures to define the parameters of learning.
3. **Collaborative learners** prefer to learn in a peer or social context through cooperative approaches.
4. **Competitive learners** view learning as a win-lose encounter and are motivated to learn in order to excel in comparison to others.

5. **Participant learners** perceive the learning environment as an opportunity to interact with others.
6. **Avoidant students** are not actively involved in the learning process and are frequently non-achievers.

The *Grasha-Reichmann Student Learning Style Scale* (Reichmann & Grasha, 1974) uses a Likert scale to assess students on these six dimensions of learning and the scale evidences fair reliability and validity data (Curry, 1987).

Multidimensional and Instructional Preference Models

Instructional preference models address the individual's choice of environment in which to learn.

Instructional preference models address the individual's choice of environment in which to learn. As such they are multidimensional and seek to address the variations among learners within the context of the learning process.

The *Human Information Processing Model* (Keefe, 1989) views learning as the interaction of cognition (mind) and context (task). The *Learning Style Profile* (LSP) (Keefe & Monk, 1986) operationalizes this model by identifying 24 elements of style, which are clustered into three areas as follows: (1) **Cognitive Skills** assess information processing and include analytic, spatial, discrimination, categorization, sequential processing, simultaneous processing, and memory. (2) **Perceptual Responses** measure the initial response to information and include visual, auditory, and emotive. (3) **Study and Instructional Preferences** identify personal preferences for the motivational and environmental elements of style and include persistence orientation, verbal risk orientation, manipulative preference, time (early morning, late morning, afternoon, evening), verbal-spatial, grouping, posture, mobility, sound, lighting, and

Study and Instructional Preferences identify personal preferences for the motivational and environmental elements of style....

...cognitive skill development is a prerequisite for learning...if students cannot process information effectively, even supportive learning environments will be of minimal value.

temperature preferences. Application of this model is based on the premise that cognitive skill development is a prerequisite for learning; that is, if students cannot process information effectively, even supportive learning environments will be of minimal value. Several monographs have been developed as a practical guide for cognitive skill enhancement (Keefe, 1989) and for identifying perceptual, study, and instructional preferences that accommodate a variety of learning style patterns (Keefe, 1990).

The second major multidimensional model was developed by Dunn and Dunn (1978) and is described in depth later in this text. It is the model that holds the greatest promise for the application of learning styles to the counseling process for the following reasons: (1) It is a multidimensional model that encompasses physical, environmental, emotional, sociological, and psychological dimensions of learning; (2) It stresses the importance of individual differences in the learning process; (3) It has a strong research base that supports the identification of instructional interventions that are compatible with individual strengths and preferences toward the end of increased academic achievement and improved student attitudes toward learning; and (4) The method of diagnosing learning styles is concise, extensively field tested, and shows evidence of good reliability and validity (Curry, 1987).

Summary of Learning Style Models

The eight learning style models identified...have implications for learning and counseling.

The eight learning style models identified are not the only ones developed to date, but they were reviewed here because they are representative of the four types of approaches (personality dimensions, information-processing, social interaction, instructional preference) and have implications for learning and counseling. These models are similar because they stress the importance of identifying and addressing individual differences in the learning process. However, there

are important differences among the models which need to be assessed by practitioners. Some models are unidimensional and address a single construct for explaining individual differences in learning, while other models are multidimensional and view individual differences in learning as complex and multifaceted. Another area of disagreement is whether to accommodate students' style preferences or attempt to expand their style in the learning process. Other differences include a range of quality among the assessment instruments and the lack of a research base for some of the models (DeBello, 1990).

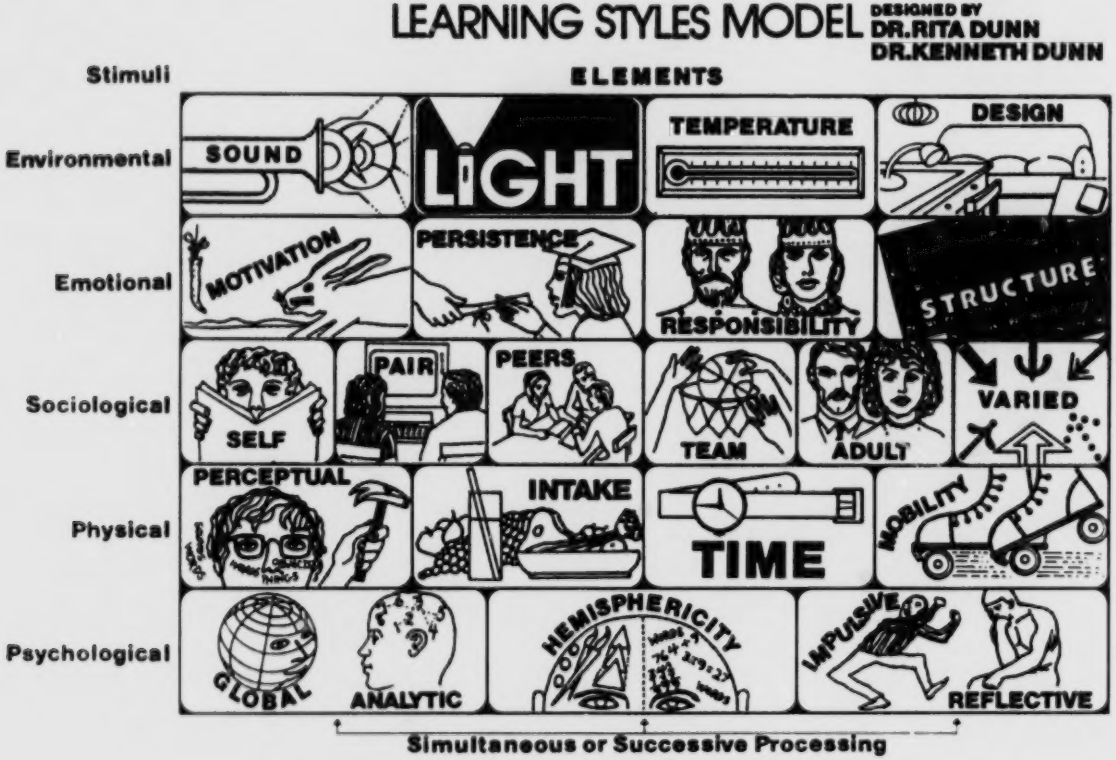
Another area of disagreement is whether to accommodate students' style preferences or attempt to expand their style in the learning process.

Diagnosing Learning Style

Dunn and Dunn (1978) define learning style as the manner in which different elements from five basic stimuli affect a person's ability to perceive, interact with, and respond to the learning environment. The learning style elements, illustrated in Table 1, are as follows: (1) environmental stimulus (light, sound, temperature, design); (2) emotional stimulus (structure, persistence, motivation, responsibility); (3) sociological stimulus (pairs, peers, adults, self, group, varied); (4) physical stimulus (perceptual strengths, including auditory, visual, tactual, kinesthetic, mobility, intake, time of day—morning versus evening, late morning, and afternoon); and (5) psychological stimulus (global/analytic, impulsive/reflective, and cerebral dominance).

Four instruments assess learning style: The *Learning Style Inventory—Primary Version* (LSI–P) (Perrin, 1981) for children in kindergarten through grade two; the *Reading Style Inventory* (RSI) (Carbo, 1981) for pupils in grades one through three; the *Learning Style Inventory* (LSI) (Dunn, Dunn, & Price, 1985) for youth in grades three through 12; and the *Productivity Environmental Preference*

Table 1



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Survey (PEPS) for adults (Dunn, Dunn & Price, 1982).

The *Learning Style Inventory—Primary Version* is a pictorial questionnaire based on the Dunn and Dunn *Learning Style Model.* It consists of 12 charts that assess critical elements of style. Spearman Brown reliability coefficients for the subscales range from .50 to .88.

The *Reading Style Inventory* is a multiple choice, self-report questionnaire designed to identify the individual reading style preferences of students. The interpretation of results includes specific reading strategies, methods, and types of materials that are appropriate for each student. Test-retest reliability coefficients for the 13 *RSI* subscales range from .67 to .77.

The *Learning Style Inventory* incorporates 22 elements relating to the environmental, emotional, sociological and physical preferences of the individual. It is based on a 104-item self-report questionnaire that was developed through content and factor analysis. The LSI uses a five-point Likert scale for students in grades 5–12, and a three-point Likert scale for students in grades 3–4, and can be completed in approximately 30 to 40 minutes. It contains a consistency key to indicate the carefulness with which each respondent has answered the questions. Ohio State University's National Center for Research in Vocational Education published the results of its two-year study of instruments that identify learning style and reported that "the LSI had established impressive reliability and face and construct validity" (Kirby, 1979, p. 72). Since examination by the Center, the LSI has evidenced predictive validity (DeBello, 1985; Della Valle, 1984; Krimsky, 1982; Kroon, 1985; Lynch, 1981; Martini, 1986; Murrain, 1983; Pizzo, 1981; Shea, 1983; Virostko, 1983; White, 1980).

The Learning Style Inventory incorporates 22 elements relating to the environmental, emotional, sociological and physical preferences of the individual.

The *Productivity Environmental Preference Survey* is the adult version of the LSI. It is a 100-item

self-report questionnaire that identifies individual adult preferences for conditions in a working and/or learning environment. It is similar to the LSI in terms of: (1) measurement of 20 elements on a five-point Likert scale, (2) development by content and factor analysis, and (3) reliability data equal to or greater than .60 for 68% of the 20 elements.

A knowledge of our own learning style can make us aware of counseling orientations and approaches that we tend to favor over others....

Use of both learning style instruments is important in our schools because the adult version can be used to assess the learning styles of teachers and counselors. A knowledge of our own learning style can make us aware of counseling orientations and approaches that we tend to favor over others, thus accommodating some students whose styles are congruent with our own, and possibly alienating other students. Clearly, the starting point in teaching and counseling is to respond to the learning style needs of students which implies knowledge of our own preferences and a conscious effort to expand our repertoire of counseling interventions and techniques to respond to student diversity.

Different instruments are used to assess the psychological stimuli—Zenhausern's *Revised Dominance Scale* (1978) is used to assess cerebral dominance; Sigel's *Conceptual Style Test* (1967) is used to identify global versus analytic styles; and Kagan's *Matching Familiar Figures Test* (1966) is used to identify impulsive versus reflective styles.

Normative data on the LSI were obtained by testing 1,200 students in grades 3–12, representing various regions and settings; PEPS data were derived from testing 589 adults, who represented a broad range of occupational levels. For ease of interpretation, individual raw scores in each area are transformed to T-scores with a mean of 50 and standard deviation of ten.

The computerized scoring of the *Learning Style Inventory* permits varied types of printouts including:

- **Individual Profile** provides the student's name, sex, date inventory was scored, group

identification, raw scores and standard scores for each area, and a plot for each score in each area.

- **Group Summary** is based on listing those students who have standard scores higher than 60 and lower than 40 in each area.
- **Sub-scale Summary** indicates the number and percent of the total group that identified that particular area as important (standard score higher than 60) or not important (standard score less than 40).

Most students identify between five and seven elements, which are either high or low preferences for them.

Analyzing the Basic Elements of Learning Style

Interpretation of the learning style areas is based upon identifying preferences....

Interpretation of the learning style areas is based upon identifying preferences; that is, those elements in which the standard scores are below 40 (low preferences) or above 60 (high preferences). If scores are in the middle range (40–59) on most elements, there is not strong preference for the element and accommodations do not have to be made in terms of the learning environment. Learning alone versus peer-oriented and morning-to-evening are two elements on a continuum. In these cases, scores below 40 indicate preferences for learning alone or in the evening; scores above 60 suggest peer-oriented or morning learners. Table 2 illustrates the interpretation of the learning style scales for counseling purposes. Twenty elements of learning styles are represented in the table, and the six sociological elements have been collapsed into three elements with alone and peer preferences represented on a continuum. Each of these elements is discussed below, and research studies are cited to verify the importance of these elements as they relate to learning.

Table 2
Interpretation of the Learning Style Scales for Counselors

Elements	Score 20–29	Score 30–39	Score 40–59	Score 60–69	Score 70–80
Sound during Counseling	Always needs quiet when learning, doing homework. Use of silence in counseling facilitates understanding.	Usually needs quiet when learning. Needs time for reflection in counseling.	Depending on the learning task, may prefer quiet or the presence of sound.	Some kind of sound (radio, recordings) enhances the learning process. Low tolerance for silence during counseling.	Consistently works in the presence of sound. Use of background music during counseling is suggested.
Light during Counseling	Always needs very low light. Eyes are sensitive and tire easily with fluorescent lighting.	Usually needs dim light to learn.	No strong preference for either low or high light.	Light area enhances the learning process.	Needs bright light and seeks out rooms with lots of windows when studying.
Temperature while Learning/ Counseling	Prefers a cool room and may find it difficult to tolerate heat.	Usually seeks out a cool environment.	No strong preferences for temperature extremes.	Usually seeks out a warm environment.	Prefers a warm room and may find it difficult to tolerate cold.
Design in Counseling	Prefers informal design, such as circular arrangement in a carpeted area for group counseling.	Usually likes informality and diversity in design.	Depending on the learning task, may prefer formal or informal arrangements.	Usually feels more comfortable in a formal setting.	Prefers formal design; tends to work consistently in the same area at a desk/hard chair.
Motivation for Learning and Counseling	Exhibits low motivation for learning and may demonstrate resistance in counseling.	Tends to procrastinate; evidences difficulty in beginning tasks.	Vascillates between high and low motivation depending on the approaches used in counseling.	Generally highly motivated for learning and counseling processes.	Consistently well-motivated; accomplishes learning tasks with enthusiasm.

Table 2 (Continued)
Interpretation of the Learning Style Scales for Counselors

Elements	Score 20–29	Score 30–39	Score 40–59	Score 60–69	Score 70–80
Persistence during Counseling	Low level of persistence which may be evidenced by leaving counseling prematurely.	Somewhat limited time on-task; distractible.	Depending upon level of interest in counseling, may or may not persist until goals are achieved.	Generally commits self to counseling and endures until goals are achieved.	High level of persistence in counseling; works consistently to achieve goals.
Responsibility Evidenced in Counseling	Has to be reminded and constantly reinforced in counseling. Tends to blame others for own life circumstances.	Somewhat irresponsible, which may be evidenced in lateness or absence from sessions.	Vascillates between responsible and irresponsible behavior in counseling.	Generally follows through on commitment to counseling.	High level of responsibility in counseling; assumes responsibility for self and behavior.
High Versus Low Structure in Counseling	Responds to counseling approaches which utilize minimum structure and allow free expression (i.e., gestalt therapy).	Prefers counseling approaches which allow for minimum structure, i.e., client centered counseling.	Prefers eclectic counseling approaches in which both active and passive techniques are utilized.	Prefers counseling approaches which define goals clearly and utilize structured techniques, i.e., behavioral counseling.	Strong need for structured counseling approaches and concreteness, i.e., trait-factor counseling.
Learning or Counseling Alone Versus Peers	Prefers to work things through alone; self-sufficient in many areas.	Generally prefers to resolve problems independently without peer counseling.	Depending on the situation, may seek help from peers or resolve problems alone.	Generally an effective peer group member.	Peer group counseling is the strongly preferred mode. Change is most likely to occur as a result of group activities.

Table 2 (Continued)
Interpretation of the Learning Style Scales for Counselors

Elements	Score 20–29	Score 30–39	Score 40–59	Score 60–69	Score 70–80
Individual Counseling	Not a good candidate for individual counseling. Likely to exhibit resistance in counseling.	If given a choice, would not seek out individual counseling.	Depending upon the counseling approaches used, change may occur in individual counseling.	Generally comfortable and motivated in individual counseling.	Individual counseling is the strongly preferred mode.
Variety in Counseling Sociological Structure	Generally uncomfortable with a variety of approaches; tends to favor a single mode of counseling.	Probably has a preference for a single counseling mode.	Depending upon the situation, may be open to a variety of counseling modalities.	Generally comfortable with diversity in counseling modes.	Prefers a combination of approaches in working through concerns, including alone, groups, and individual counseling.
Counseling Using Auditory Approaches	Tends to be "turned off" by talking approaches in counseling. Has difficulty listening and focusing on what is communicated.	Generally finds it difficult to participate in counseling if auditory approaches are used exclusively.	If the counselor is perceived as interesting and supportive, auditory approaches may be effective.	Generally auditory approaches in counseling are effective.	Responds well to auditory aproaches; seem to have a tape recorder going and can recall conversations verbatim.
Counseling Using Tactual Approaches	Tends to avoid doing things tactual, such as writing, picture drawing, etc.	Generally there is limited interest in tactual approaches.	Does not have a strong preference for tactual approaches, but may find these approaches helpful on occasion.	Finds tactual approaches helpful when utilized during the counseling process.	Responds well to "hands on" approaches in counseling and the use of techniques such as puppetry, clay modeling, draw-a-picture, computer use.

Table 2 (Continued)
Interpretation of the Learning Style Scales for Counselors

Elements	Score 20–29	Score 30–39	Score 40–59	Score 60–69	Score 70–80
Counseling Using Visual Approaches	Tends to be "turned off" by visual approaches in counseling such as bibliotherapy, or the use of pictures or films.	Generally finds it difficult to absorb visual content.	Depending upon the situation, visual approaches may enhance counseling.	Generally finds visual approaches helpful in counseling; i.e., the use of modeling through videotaping.	Responds well to visual approaches; seems to have a camera going and can recall faces, scenes, places.
Counseling Using Kinesthetic Approaches	Very uncomfortable with kinesthetic approaches in counseling.	Prefers not to engage in action-oriented counseling strategies.	No strong feelings about kinesthetic approaches; discretion needs to be used.	Has a preference for action-oriented counseling approaches which involve body movement.	Prefers counseling approaches that require body involvement such as role-playing and psychodrama.
Need for Intake During Counseling	Never has a need for intake while working.	Rarely utilizes food or drink while working.	Occasionally will use intake and find it enhances the learning process.	Often uses intake while learning.	Uses some kind of intake, such as food or drink, when working or learning.
Evening Versus Morning Energy Levels	Prefers evening hours for working, learning, and studying.	Generally prefers the evening for working on tasks.	Time of day or night is relatively unimportant.	Generally prefers the morning for working on tasks.	Prefers morning hours for working, learning, and studying.
Late Morning Energy Level	Sluggish and low energy level around noon.	There is somewhat of a lull in energy level around 11 a.m.	Time is not a critical element here.	Generally prefers the late morning for working.	High energy level in the late morning hours.

Table 2 (Continued)
Interpretation of the Learning Style Scales for Counselors

Elements	Score 20–29	Score 30–39	Score 40–59	Score 60–69	Score 70–80
Afternoon Energy Level	Afternoon is a poor time to schedule counseling activities.	Energy level begins to drop during the afternoon hours.	Time of day is not important; energy level is relatively constant.	Energy level begins to increase during the afternoon hours.	Afternoon is an excellent time to schedule counseling activities.
Mobility Needed in Counseling	Low need for mobility in counseling with the ability to sit for relatively long periods of time.	Generally prefers passive, low mobility, sedentary approaches in learning or counseling.	Responsive to either passive or active approaches in counseling with no strong preferences for either.	Generally prefers active, high mobility approaches in counseling.	Prefers action-oriented approaches in counseling, i.e., roleplaying, mime, art therapy.

Environmental Elements

Sound. Teachers and counselors frequently project their own preferences for sound or quiet onto students during learning or counseling periods assuming, like Jesse Jackson, that if they require the absence of sound to concentrate, the same condition must hold for everyone. Schmeck and Lockhart (1983) suggest that inherited differences in nervous system functioning require that extroverted individuals learn in a stimulating environment, while introverted persons prefer a quiet, calm environment with few distractions. In another correlational study Dunn, Cavanaugh, Eberle, and Zenhausern (1982) found that right-brain dominant high school biology students prefer music rather than silence during study times. Finally, Pizzo (1981) found that when sixth grade students were matched with their preferred acoustic environments and the presence or absence of sound, these students scored significantly higher in reading achievement and evidenced more positive attitudes toward school than students who were mismatched on this element.

Teachers and counselors frequently project their own preferences for sound or quiet onto students during learning or counseling periods....

Light. Rovner (1982) found that, in some individuals, seasonal mood changes as strong as depression could be treated successfully by increasing bright, white light in the person's environment. The Dunn et al. (1982) study on hemispheric dominance found that right brain dominant high school students prefer low lighting while studying. In a comparative study of fourth grade students, Krimsky (1982) found that when preferences for dim light or bright light were accommodated, reading speed and accuracy improved significantly in comparison to a group whose preferences were mismatched.

...seasonal mood changes as strong as depression could be treated successfully by increasing bright, white light in the person's environment.

Temperature. Some students prefer a cool environment, while others require a warm one. Mayo (1955) conducted technical training for adult men under two extreme temperature conditions. No significant differences in achievement were evidenced

between the two groups, although small percentages in each condition reported being uncomfortable; this points out the importance for determining individual temperature tolerance prior to training. In an experimental study with seventh grade students, Murrain (1983) found that students performed better on a word recognition task when thermal preferences were matched versus mismatched.

Design. Design needs while learning may be formal—a desk or chair; or informal—a couch or carpeted area. Hodges (1984) tested junior high school students to determine design requirements, and found that students learned mathematics concepts with greater precision when preferences and conditions were congruent rather than incongruent. Shea (1983) conducted a similar study with senior high school students in the area of reading comprehension and found that students who preferred informal design performed significantly better under matched rather than mismatched conditions.

Emotional Elements

Highly motivated youth have a strong drive which propels them toward task achievement.

Motivation. Highly motivated youth have a strong drive which propels them toward task achievement. Correlational studies (Cross, 1982; Griggs & Price, 1980a) reveal a relationship between a high level of self-motivation in the gifted and talented in comparison to non-gifted students. Additionally, Bolocofsky (1980) found that field dependent students evidence increased motivation in competitive classroom situations, whereas field independent students are not motivated by competition.

...students vary in terms of their level of persistence, some resigning when difficulty is encountered, and others working through all obstacles.

Persistence. When given a task to complete, students vary in terms of their level of persistence, some resigning when difficulty is encountered, and others working through all obstacles. As in the element of motivation, gifted students tend to be more persistent than non-gifted students (Griggs & Price, 1980a). In

a study of seventh grade youth, White (1980) found that more persistent and responsible students achieved significantly higher on a test of specific behavioral objectives than did students who were less persistent and responsible.

Responsibility. The White study (1980) found a positive relationship between subscales of responsibility and conformity on the *Learning Style Inventory* and the *California Psychological Inventory*, suggesting that there is a strong element of conformity in responsibility. Thus, students who tend to conform to classroom and school demands are viewed as highly responsible, whereas those who are non-conformists are perceived as low on responsibility.

...there is a strong element of conformity in responsibility.... students who tend to conform to classroom and school demands are viewed as highly responsible....

Structure. Students with a high need for structure respond well to clear objectives, delimited options, concreteness, and certainty, whereas those with low structure preferences welcome ambiguity and allowance for freedom of expression. Hart (1978) cites selected neurological studies to support his view that all children cannot be expected to learn in traditional, structured classrooms. Hunt (1979) found that adult students at lower stages of cognitive development prefer highly structured directions, while those at the higher stages prefer more flexibility and diversity. Finally, Ricca (1983) found that gifted students preferred independence and a minimum of structure in learning. Conversely, underachievers require more structure than high achievers and appear to learn better when provided with specific directions (Napolitano, 1986).

...all children cannot be expected to learn in traditional, structured classrooms.

Research has determined that younger students require more structure (Hunt, 1979; Price, 1980). This appears to be the opposite of how schools are organized: kindergartners are regularly offered multiple choices, but secondary students, who are often self-structured and nonconforming, are required to adhere to identical rules and learning strategies (Goodlad, 1984).

...younger students require more structure.... This appears to be the opposite of how schools are organized....

Sociological Elements

Frequently, counselors assume that all students are good candidates for group counseling....

The sociological stimulus, as assessed on the learning style scales, distinguishes among persons who prefer individual or group counseling. Frequently, counselors assume that all students are good candidates for group counseling, or that all residents in a foster care facility can benefit from group counseling. However, when assessed for their individual preferences in this area, many students report strong preferences for a single modality and reject other modalities.

Experimental studies have been conducted using varied sociological groupings to determine the impact on student achievement. Results demonstrate that, when students' sociological preferences were identified, and the youngsters were taught in various treatments both congruent and incongruent with their diagnosed strengths, they achieved significantly higher tests scores in matched conditions and significantly lower test scores under mismatched conditions (DeBello, 1985; Giannitti, 1988; Miles, 1987; Perrin, 1984).

A number of studies support the position that gifted students prefer learning alone rather than in groups....

Self. Independent learners prefer alternative instructional environments (Martin, 1977). A number of studies support the position that gifted students prefer learning alone rather than in groups or in adult-directed modalities (Griggs & Price, 1980a; Wasson, 1980). However, Perrin (1984) found that gifted students had significantly higher achievement on problem-solving tasks when they were grouped homogeneously with other gifted students than when they worked alone or in heterogeneous groups.

Peers. Selected students respond best to learning with peers and group counseling. Although McLeod and Adams (1979) speculated that sociological preferences are related to field independence/dependence, with field dependent persons preferring to learn with peers rather than independently, their

research failed to result in better task performance under the congruent condition.

Adult/Teacher. In a comparative study of secondary school youth, Gadwa and Griggs (1985) found that students who had dropped out of school had the strongest preference for teacher-directed learning, alternative students were in the mid-range, and traditional students had the lowest preferences on this element.

...students who had dropped out of school had the strongest preference for teacher-directed learning, alternative students were in the mid-range, and traditional students had the lowest preferences....

Physical Elements

Perceptual Strengths. A number of counseling theorists are recognizing the importance of perceptual strengths or representational systems. Bandler and Grinder (1979) maintain that once the counselor has identified the counselee's favored system and responded out of that system (auditory, visual, tactual-kinesthetic), feelings of trust and rapport increase. Price (1980) determined that preferences for tactual and kinesthetic modalities develop first, followed by the development of auditory preference. A number of studies verify that students' learning is enhanced when they are taught through their personal perceptual preferences (Carbo, 1980; Jaronsbeck, 1984; Kroon, 1985; Martini, 1986; Urbschat, 1977; Weinberg, 1983; Wheeler, 1983).

A number of studies verify that students' learning is enhanced when they are taught through their personal perceptual preferences....

Intake. A small percentage of students like to drink or snack while learning or studying, whereas others do not associate these activities with oral need satisfaction. Dunn et al. (1982) found a higher proportion of right hemispheric dominant high school students preferred some form of oral intake as compared to left hemispheric dominant students. MacMurren (1985) reported statistically higher reading scores on a standardized test when children with high intake preferences were permitted to snack during the test.

Time. A number of educators recognize discernible "highs" and "lows" in students during the

school day and point to the importance of adjusting school schedules to accommodate student preferences for morning versus afternoon versus evening peak times (Biggers, 1980; Brooks, 1980; Loviglio, 1980). Lynch (1981) found that, when matched for their time preferences, chronic truants attended school more frequently. In a study of elementary school youth, Virostko (1983) found that those students whose time preferences were congruent with their class schedule achieved significantly higher in mathematics and reading than those who were not matched for their time preferences.

...when matched for their time preferences, chronic truants attended school more frequently.

Mobility. Some students need a great deal of mobility in the learning environment. This is evidenced by their inability to sit for long periods of time and the need to vary their posture and location frequently. For some adolescents and adults their best thinking is done while pacing up and down or engaging in some physical activity. In a group of seventh grade students, Della Valle (1984) found that when students were placed in settings congruent with their preferences for mobility versus passivity, achievement on word recognition tasks was higher than when placement was incongruent. Generally, counselors can accommodate mobility needs more readily than teachers, who need to identify programmatic options for students with high mobility requirements.

Psychological Elements

Psychology has recognized individual differences in personality, learning style, and behavioral patterns and developed bipolar constructs to identify some of these variations including: inductive versus deductive, global versus analytic, convergent versus divergent, field dependent versus field independent, right versus left dominant, and reflective versus impulsive.

Global processors are holistic, visual-spatial, metaphoric, and intuitive....

Global versus Analytic. Global processors are holistic, visual-spatial, metaphoric, and intuitive and

respond well to art therapy, relaxation, meditation techniques, and visual techniques. Analytic processors are logical, sequential, and verbal and respond well to verbal techniques and cognitive-rational counseling approaches. Coop (1968) found that non-analytic college students achieved better through teacher-structured rather than problem-solving methods. Generally, studies of the cognitive styles of high school students find that global students' achievement is higher when taught by deductive methods, whereas analytic students' achievement is higher when taught through inductive methods (Brennan, 1984; Douglass, 1979; Tanenbaum, 1982; Trautman, 1979).

Analytic processors are logical, sequential, and verbal and respond well to verbal techniques and cognitive-rational counseling approaches.

Hemispheric Dominance. Students who are strongly left dominant tend to be analytic, highly verbal, auditory learners and respond to inductive approaches, whereas students who are right dominant tend to be non-analytic, respond well to tactual-kinesthetic or visual learning modalities, and favor deductive learning approaches. Dunn et al. (1982) found that right dominant high school students have strong learning style preferences for informal design, music while studying, oral intake, high mobility, and dim lighting. In studying the process of second language acquisition, Benderly (1981) found that young children learn best through left brain, conversational approaches while adolescents learn better through right brain, visual-tactile methods. In a study of low-achieving fourth grade students, Jaronsbeck (1984) concluded that "rights" learned better when taught through activity-oriented groups and "lefts" achieved better than rights in the conventional control groups.

The reflective student tends to analyze and thoroughly differentiate a complex concept; an impulsive student is inclined to make quick and often erroneous responses.

Impulsive versus Reflective. Research on analytic and non-analytic modes led to the identification of a "reflection-impulsivity" dimension (Keefe, 1979). The reflective student tends to analyze and thoroughly differentiate a complex concept; an impulsive

student is inclined to make quick and often erroneous responses. In comparing performance, Odom, McIntyre, and Neale (1971) found that impulsive learners made errors and reflective learners needed fewer trials to learn. Matson (1980) demonstrated that impulsivity could be modified through redesigning instructional materials and through teacher modeling.

...impulsive learners made errors and reflective learners needed fewer trials to learn.

Relating Learning Styles to Effective Counseling

The school counselor's role is a comprehensive one: individual and group counseling...testing and interpreting assessment data...developing, conducting, and evaluating programs....

The school counselor's role is a comprehensive one: individual and group counseling with students; testing and interpreting assessment data in educational-vocational areas; developing, conducting, and evaluating programs in career education and psychological education; training and supervising peer helpers; and consulting with teachers, parents and administrators.

Counseling students for their individual learning styles involves the following steps:

1. **Assessing the developmental needs of students.**
   - Awareness of the developmental needs, psychosocial crises, and developmental tasks that are stage-related and common to children or adolescents overall.
   - Determination of special needs that are specific to the school population in economic, social, or family areas. (Special education students, low income families, single-parent families, bilingual/bicultural students, high-risk students, gifted and talented students, etc.)
2. **Developing a comprehensive, developmental counseling program based upon the needs assessment.**

3. **Assessing the individual learning styles of students, counselors, teachers, and staff members.**
   - Counseling students to help them develop an understanding of their own learning style preferences.
   - Providing inservice education and consultation services for teachers, counselors, and administrators to help them assess their own learning styles and understand how their styles of teaching and counseling impact students.
4. **Planning teaching and counseling interventions that are compatible with the learning style needs of students.**
   - Matching specific teaching and counseling techniques/approaches/interventions with selected student or student group requirements.
   - Using a variety of techniques and interventions to accommodate individual needs.
5. **Evaluating teaching and counseling outcomes to determine the extent to which program objectives and counseling objectives have been achieved.**

The basic assumptions of counseling for individual learning styles are listed as follows:

- Individuals are unique and they are central to the counseling process. Counseling techniques/strategies/interventions must be tailored to accommodate these individual differences. Learning styles are not related to intelligence, mental ability, or actual performance. No learning style is better—or worse—than any other style.
- Counseling is fundamentally a learning process that, if successful, involves

Learning styles are not related to intelligence, mental ability, or actual performance. No learning style is better—or worse—than any other style.

positive changes in the attitudes and behavior of the counselee.

- Individuals have learning style preferences, which, if attended to, will facilitate the learning process.
- The counselee is knowledgeable in terms of identifying his/her learning style preferences and can report accurately these preferences on a self-report inventory.
- Counselors can plan interventions which are compatible with the learning style preferences of the individual counselee.

If the counseling approaches are compatible with the individual learning style preferences of the counselee, the goals of counseling will be achieved.

The following is a fundamental tenet of counseling for individual learning styles: If the counseling approaches are compatible with the individual learning style preferences of the counselee, the goals of counseling will be achieved.

An example of one learning style element—the need for high versus low structure—is discussed to indicate how the school counselor can accommodate students through counseling and consultation activities.

Students' needs for varying amounts of structure can be accommodated in counseling by grouping students according to their needs. For example, in group counseling with junior high/middle school students who require a high degree of structure, the following procedures are desirable:

- Clearly delineate counseling objectives and goals during the initial stages of counseling.
- Use highly structured counseling approaches, e.g., behavioral and cognitive approaches (rational-emotive-therapy or behavioral counseling) which present a problem-solving, highly structured approach to problem resolution.
- Use homework, schedules, and time management strategies to assist students in applying learning to their daily activities.

Use homework, schedules, and time management strategies to assist students in applying learning to their daily activities.

- Use a theme approach during counseling—identifying areas of common concern such as despondency, friendship, anger, jealousy, achievement, security, divorce—as a way to focus students.

Use a theme approach during counseling—identifying areas of common concern....

In consultation with teachers and parents, counselors should emphasize the need for accommodating students who require high degrees of structure by stressing the importance of:

- Highly structured classroom techniques, including instructional packages, programmed sequential learning, and computer-assisted instruction.
- Concrete and specific homework assignments with guidelines on how to proceed with each assignment.

Conversely, students who prefer little structure will resent too many guidelines. They welcome choices, options, and the opportunity to pursue learning through creative and divergent approaches. In group counseling, for example, client-centered and existential approaches are desirable because they encourage the student to identify areas of concern, explore these concerns in a variety of ways, and arrive at change through insight. In consultation with teachers and parents, counselors should emphasize the need for accommodating students who require low structure by stressing the importance of:

Conversely, students who prefer little structure will resent too many guidelines. They welcome choices, options, and the opportunity to pursue learning through creative and divergent approaches.

- Classroom techniques such as creative writing, open discussion, and independent study, which allow for the pursuit of learning objectives through a variety of modalities.
- Open-ended homework with individual projects which allows students to reinforce classroom learning through a variety of methods.

The upcoming chapters review prescriptions for counseling interventions based upon a combination of the different learning style elements that have been discussed thus far.

Chapter 2

Prescribing Counseling Interventions Based on Learning Styles

Sarah Fletcher, the counselor at Lincoln Elementary School, looked across her desk at Jim Hawkins, who had been sent to her office from his science class. She had studied the hastily written note from his sixth-grade science teacher: "Jim refuses to learn, openly plays with his Rubik's cube, constantly fails to submit homework assignments, and is failing the course. Help!"

Mrs. Fletcher addressed Jim with, "Tell me about yourself, Jim, and how you feel about school." Jim remained sullen, with his head down, feet shifting nervously, and avoiding eye contact. He seemed to have "tuned out" Mrs. Fletcher completely.

"Jim refuses to learn, openly plays with his Rubik's cube, constantly fails to submit homework assignments, and is failing the course. Help!"

She tried again, with concern in her voice, "I'm here to assist you, Jim. We can work on your problems and resolve them. It will help if you can confide in me." Jim looked up and met her glance; his look conveyed a mix of frustration, disbelief, and anger.

Attempting to reflect his feelings, Mrs. Fletcher bent toward him saying, "You seem pretty upset with things here in school, Jim. You're angry because your science teacher sent you from class and you're telling yourself that I'm probably the same—that I can't possibly understand you either." They waited for some time in silence, with Mrs. Fletcher studying Jim intently and Jim appearing to show more interest

in the floor than in the counseling session. At last, the dismissal bell rang and Jim raced for the door, slamming it as he left the office.

Sarah Fletcher began to reflect upon all the "Jim's" in her counseling group—students who teachers could not reach in the classroom and were labeled "non-achievers" or "learning disabled."

Sarah Fletcher began to reflect upon all the "Jim's" in her counseling group—students who teachers could not reach in the classroom and were labeled "non-achievers" or "learning disabled." She always seemed to encounter the same difficulties in counseling these students: they demonstrated apathy and resistance. In searching for a means to reach Jim, and deal effectively with his academic problems and concerns, Mrs. Fletcher asked herself a question which is fundamental in counseling:

> Which **counseling approaches** (behavioral, existential, Adlerian) are most appropriate with which **types of clients** (background variables, individual learning styles, personality characteristics) with what **kind of problem** (educational, vocational, social, personal) in what **kind of setting** (individual counseling, group counseling, classroom, peer helping), using what **kinds of techniques/interventions/methods** (cognitive techniques, auditory versus visual versus tactual-kinesthetic approaches, structured versus unstructured modalities)?

This chapter is designed to assist school counselors, like Sarah Fletcher, to design counseling interventions and strategies that are compatible with the learning style characteristics of students like Jim Hawkins and other students with special needs.

Matching Individual Learning Styles With Appropriate Counseling Techniques at the Elementary School Level

Counseling may be developmental, preventive, or crisis in nature.

Counseling may be developmental, preventive, or crisis in nature. Counselors utilizing a developmental

approach recognize that human development is characterized by stages, with each stage containing a different psychosocial crisis and different developmental tasks which must be mastered. The developmental approach is the basis of counseling for individual learning styles and will be discussed later in more detail.

The developmental approach is the basis of counseling for individual learning styles....

The preventive approach to counseling is primarily programmatic but related to specific concerns. For example, preventive counseling might involve a late-elementary or middle-school sex education program designed for the purpose of alleviating anxieties about sexuality and sexual relationships. Counselors work with students to help them understand themselves in relation to sexual concerns so that they are better prepared to handle them in the future. Another programmatic approach focuses on self-awareness as it relates to future career choices and career preparation. Drug awareness, divorce, leisure time options, and communication skills are other areas that can be approached systematically by counselors.

Crisis counseling involves providing support and intervention during some crisis situation, such as loss of a parent, divorce or separation, illness, or failure. The counselor helps the young person deal with the immediate situation and find an effective solution which will enhance overall functioning. Additionally, school counselors receive referrals from classroom teachers, indicating that students are experiencing crises.

Crisis counseling involves providing support and intervention during some crisis situation, such as loss of a parent, divorce or separation....

Research indicates that teachers refer students to counselors for the following problems (Blackham, 1977):

- **Emotional problems**—immaturity, impulsivity, moodiness, anxiety, hyperactivity, and withdrawal.
- **Intellectual deficiencies**—inadequate ability, deficits in memory, short attention span,

perceptual impairments, poor study habits, and underachievement.

- **Motivational deficits**—lack of ambition, lack of interest, low levels of aspiration, and negative attitudes.
- **Moral deficits**—lying, stealing, obscenity, sexual indiscretion, and underdeveloped values.
- **Physical difficulties**—chronic illness, orthopedic handicaps, poor health habits, and psychosomatic problems.
- **Maladaptive behaviors**—aggressive antisocial behavior, substance abuse, family conflicts, isolation, and uncouth behavior.

Human development theorists provide the framework for counseling students through their individual learning styles.

Human development theorists provide the framework for counseling students through their individual learning styles. Erik Erickson (1982) has identified ten developmental stages commencing with infancy, and progressing through very old age. These stages, together with the psychosocial crisis of each stage, are as follows:

1. Infancy (0–2 years):
   Trust versus Mistrust
2. Toddlerhood (2–4 years):
   Autonomy versus Shame/Doubt
3. Early School Age (5–7 years):
   Initiative versus Guilt
4. Middle School Age (8–12 years):
   Industry versus Inferiority
5. Early Adolescence (13–17 years):
   Group Identity versus Alienation
6. Later Adolescence (18–22 years):
   Individual Identity versus Role Diffusion
7. Young Adulthood (23–34 years):
   Intimacy versus Isolation

8. Middle Adulthood (34–60 years):
   Generativity versus Stagnation
9. Later Adulthood (60–75)
   Integrity versus Despair
10. Very Old Age (75+)
    Immortality versus Extinction

Students enrolled in elementary schools are predominantly in the third or fourth stages of development; that is, the early and middle school age. During this period, the child learns the fundamental skills of the culture. Increased emphasis is placed on intellectual growth, competence, and a growing investment in work. The developmental tasks of this stage include: (1) social cooperation; (2) self-evaluation; (3) skill learning; (4) team play; (5) learning appropriate sex roles; and (6) developing conscience, morality and a set of values. Social cooperation is largely focused on the same-sex peer group and results in increased movement from egocentric behavior to becoming increasingly sensitive to group norms and pressures. While the young school child focuses primarily on the teacher for approval and acceptance, the middle school child focuses on the peer group. This is a period of "best friends," private jokes, and secret codes. During this period, the child is engaged in self-evaluation, concerned with placement in the group and sensitive to labeling by teachers and peers. Skill learning involves the acquisition of intellectual, artistic, and athletic skills. The child learns the fundamentals of team play, including competition and learning to subordinate personal goals for group goals.

While the young school child focuses primarily on the teacher for approval and acceptance, the middle school child focuses on the peer group.

The psychosocial crises of elementary school children are initiative versus guilt and industry versus inferiority. Initiative involves active inquiry and investigation of the environment; the child is curious about everything! If curiosity is stifled or the child is severely restricted in the area of expression, self-

The psychosocial crises of elementary school children are initiative versus guilt and industry versus inferiority.

doubt and guilt develop. Industry is characterized by an eagerness for building skills and performing meaningful work. Each new skill acquired results in increased independence and self-esteem. Inferiority and feelings of inadequacy result from two sources: self and environment. Personally, the child may have physical, emotional, or mental limitations that prevent the acquisition of certain skills. Environmentally, children may be grouped and graded on the basis of how they compare to others. In extreme cases teachers observe the reluctance, self-doubt, and withdrawal of the child who feels extremely inferior.

Inferiority and feelings of inadequacy result from two sources: self and environment.

The central process during the elementary school years is education, which is responsible for the development of a personal sense of industry. Frequently, children are placed in situations where the probability of success is minimal: adults set expectations or goals beyond their reach. The school environment may be extremely competitive, resulting in failure for some students. Parents may tie success with acceptance, failure with rejection. During this stage it is essential that educators recognize individual differences: some students work in creative spurts; some require a high degree of structure, while others thrive on minimal structure; some prefer to learn independently, while others are motivated to learn through peer group interaction. It is important for educators to diagnose individual learning styles and to generate an educational environment that provides for these varied styles.

Frequently, children are placed in situations where the probability of success is minimal: adults set expectations or goals beyond their reach.

In deciding upon the counseling interventions that are most appropriate, the counselor should: (1) analyze the learning style profile of the student; (2) consult Table 2 to interpret the profile in terms of preference (scores over 60) and rejection (scores under 40); and (3) select counseling interventions that are compatible with these learning style requirements.

Elements of learning style which are compatible with selected counseling objectives and interventions

for students at the elementary school level are outlined below according to the developmental tasks of early and middle childhood.

1. **Developmental Task: Social Cooperation**

   Counseling Objective: To help students develop social skills. For example, developing the ability to understand others and to understand the meaning of friendship. Also, learning teamwork—how to cooperate with others.

   Compatible Learning Style Elements:

   a. Emotional elements—high need for structure; low on motivation and responsibility
   b. Psychological elements—global orientation, right hemispheric dominance

   Counseling Intervention: Conduct group guidance sessions in a sixth grade classroom utilizing the DUSO kit (Dinkmeyer, 1970) containing a problem, a story, a role playing activity, puppetry, and discussion outline in such theme areas as friendship, cooperation, winning and losing, keeping a secret, and self-confidence.

2. **Developmental Task: Self-Evaluation and Self-Esteem**

   Counseling Objective: To help students build wholesome attitudes toward self and others.

   Compatible Learning Style Elements:

   a. Sociological elements—self- and adult-motivated
   b. Emotional elements—low motivation
   c. Psychological elements—high impulsivity

   Counseling Intervention: Through "self-enhancing educational techniques"

...the counselor helps the student focus on how to relate and interact with others effectively, through problem-solving, self-control, and self-direction methods.

(Randolph & Howe, 1973) the counselor helps the student focus on how to relate and interact with others effectively, through problem-solving, self-control, and self-direction methods. The intervention is particularly useful with underachieving and alienated youth.

Counseling Objective: To learn positive thinking skills and positive self-esteem skills.

Compatible Learning Style Elements:

a. Physical elements—auditory, visual, tactual, kinesthetic
b. Social elements—peer oriented
c. Psychological elements—global and analytic

Counseling Intervention: Conduct group counseling sessions using the *Pumsy in Pursuit of Excellence* program (Anderson, 1987) consisting of eight related skill units that address a difficulty that children may meet as they work toward building a positive self-image through the use of storytelling, discussion, and activity sheets.

3. Developmental Task: Skill Learning

Counseling Objective: To help students who are experiencing adjustment problems express feelings and communicate more effectively.

Compatible Learning Style Elements:

a. Physical elements—tactual and kinesthetic perceptual preferences
b. Emotional elements—low structure
c. Sociological elements—self- or adult-oriented

Conduct individual counseling sessions with shy, withdrawn, aggressive or anxious children....

Counseling Intervention: Conduct individual counseling sessions with shy, withdrawn, aggressive or anxious children, using play media such as dolls, puppets, clay, toys,

and drawing materials. Through supportive interactions with the counselor, children learn to express themselves more effectively.

4. **Developmental Task: Learning Appropriate Sex Roles and Work Orientation**

   Counseling Objective: To consult with the fifth grade social studies teacher to develop a unit on work orientation and awareness of a variety of work settings.

   Compatible Learning Style Elements:

   a. Sociological elements—peer- and group-oriented
   b. Physical elements—high mobility; accommodates a variety of perceptual preferences, including tactual, kinesthetic, auditory, and visual

   Counseling Intervention: Each student is encouraged to spend a half-day with parents or other adults on the job to obtain a clearer picture of the mother's and father's occupation and work setting. Follow-up activities might involve writing about the experience, giving oral reports, or discussing the field trip in small groups.

Each student is encouraged to spend a half-day with parents or other adults on the job to obtain a clearer picture of the mother's and father's occupation and work setting.

5. **Developmental Task: Developing Conscience, Morality, and a Set of Values**

   Counseling Objective: To facilitate the moral development of students and clarify values.

   Compatible Learning Style Elements:

   a. Sociological elements—self and adult
   b. Physical elements—auditory perceptual preference; schedule the counseling session in the morning or afternoon according to student preference.

...a tape recorder is used in individual counseling in which the student is guided to create a story with a moral.

Counseling Intervention: Through the mutual storytelling technique (Gardner, 1971), a tape recorder is used in individual counseling in which the student is guided to create a story with a moral. The counselor follows up with a story that reflects a healthier resolution or a more mature approach to the situation.

Hence, the role of the elementary school counselor is a comprehensive one involving aiding students with their educational, career, and personal development and helping them plan for progress toward educational and vocational goals. School counselors work with students both individually and in groups. They also work in a consultative role with teachers, administrators, parents, and community agency personnel. Extensive use is made of school records and testing results to help students develop their individual plans (Pietrofesa, Hoffman, Splete, & Pinto, 1978).

A case study is provided to assist elementary school counselors in applying the learning style approach in counseling.

A case study is provided to assist elementary school counselors in applying the learning style approach in counseling. Mary Jones, a fifth grade student, is ten years of age. Her *Learning Style Inventory* results are illustrated in Table 3. Strong preferences, or standard scores of 60 or above, include design, peer learning, tactual and kinesthetic approaches. Scores of 40 or below indicate low areas and the profile indicates that Mary has minimal motivation and responsibility and is not visually oriented. An interpretation of this profile in terms of counseling implications indicates the following about Mary's learning style:

- Prefers a formal design; tends to work consistently in the same area—at a desk and on a straight chair.
- Group counseling with peers is the strongly preferred mode of counseling.

Table 3

INDIVIDUAL PROFILE

LEARNING STYLE INVENTORY

NAME: MARY JONES ID. NO.: DATE: 02-04-1991

SEX: F GRADE: 5 BIRTHDATE: 81 / 02 GROUP NO.: 999
YR / MO

GROUP IDENTIFICATION: PRICE SYSTEMS INC SPECIAL CODE:

********** SCALE **********

SCORE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
RAW	10	8	10	12	10	10	4	8	24	8	10	8	3	15	21	10	12	8	10	8	8	9
STD.	40	37	30	56	20	25	24	37	52	35	38	29	26	44	41	33	42	39	32	33	20	20

********** PREFERENCE SUMMARY **********

	20	30	40	50	60	70	80	
1	/	Prefers Quiet -*-		NOISE LEVEL	/	Prefers Sound	/	1
2	/	Prefers Dim -*-	/	LIGHT	/	Prefers Bright	/	2
3	/	Pref-*- Cool	/	TEMPERATURE	/	Prefers Warm	/	3
4	/	Prefers Informal	/	DESIGN -*-	/	Prefers Formal	/	4
5	*-	Low	/	MOTIVATION	/	High	/	5
6	/	-*- Low	/	PERSISTENT	/	High	/	6
7	/	-*- Low	/	RESPONSIBLE	/	High	/	7
8	/	Does Not Like -*-	/	STRUCTURE	/	Wants	/	8
9	/	Prefers Alone	/	ALONE/P-*-S	/	Prefers With Peers	/	9
10	/	Does Not Want -*-s	/	AUTHORITY FIGURES	/	Wants Present	/	10
11	/	Does Not Learn In-*-	/	SEVERAL WAYS	/	Prefers Variety	/	11
12	/	Does N-*-Prefer	/	AUDITORY	/	Prefers	/	12
13	/	Doe-*-ot Prefer	/	VISUAL	/	Prefers	/	13
14	/	Does Not Prefer	/	-*- TACTILE	/	Prefers	/	14
15	/	Does Not Prefer	-*-	KINESTHETIC	/	Prefers	/	15
16	/	Does Not P-*-er	/	INTAKE	/	Prefers	/	16
17	/	Prefers Evening	/-*-	TIME OF DAY	/	Prefers Morning	/	17
18	/	Does Not Prefer -*-		LATE MORNING	/	Prefers	/	18
19	/	Does Not -*-fer	/	AFTERNOON	/	Prefers	/	19
20	/	Does Not P-*-er	/	MOBILITY	/	Prefers	/	20
21	*-	Low	/	PARENT MOTIVATED	/	High	/	21
22	*-	Low	/	TEACHER MOTIVATED	/	High	/	22
	20	30	40	50	60	70	80	

CONSISTENCY: 100 PROFILE NO.: 1

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- Responds well to "hands on" approaches which involve body movement.
- Prefers action-oriented counseling approaches which involve body movement, including roleplay and psychodrama.
- Tends to procrastinate and evidences difficulty in task completion.
- Somewhat irresponsible, which may be evidenced by tardiness to school.
- Generally finds it difficult to absorb visual content.

Additionally, Mary is an only child with achievement-oriented parents, who exert pressure on Mary to excel in school. *Otis-Lennon Mental Ability Tests* indicate that she has a 120 I.Q., but the *California Achievement Tests* indicate average achievement in major subject areas.

For counseling Mary, group counseling with other students who evidence learning style preferences for tactual-kinesthetic modalities is indicated.

For counseling Mary, group counseling with other students who evidence learning style preferences for tactual-kinesthetic modalities is indicated. Excerpts from the third group counseling session, designed to help Mary and her peers become more responsible and less procrastinating, are described as follows:

Counselor: We agreed last week that today's session would be spent on "things we put off or delay" and a number of you—Mary, Juanita, and Joshua—stated that you tend to delay on homework, household chores, or going regularly to church activities. Let's try to find reasons for why we delay these activities instead of getting the job done!

Joshua: I think going to Bible meetings are boring. It's more fun to watch TV or play with my computer games!

Mary: It's always my mother's idea that I do my homework as soon as I come in

It's always my mother's idea that I do my homework as soon as I come in from school. I want to put it off.

from school. I want to put it off. Sometimes I can get it done during reading class, then I have more time at home for other stuff.

Susan: But most of the time you don't get your math done, Mary. Mrs. Rotter is always on your case.

Mary: Yeah. I know I'm going to get a bad grade in math and that will really upset my mother.

Counselor: It sounds like you know that your excuses for putting off homework aren't really helping you Mary. What are some things that might help Mary get homework and other tasks completed on time?

It sounds like you know that your excuses for putting off homework aren't really helping you Mary.

Juanita: My mom cuts my allowance if I don't get jobs done. She says that's what happens when you're grown-up and don't work—no money.

Joe: Mary could make her homework more fun and work on it with Susan.

Susan: Yeah, I could work with Mary. I get the homework done first and then I watch TV and stuff.

Tom: Mary could make a schedule and divide up her time better.

Counselor: Some of you have some good suggestions for Mary. Let's roleplay some of these different ideas to show how Mary would behave differently if she got jobs done on time.

Let's roleplay some of these different ideas to show how Mary would behave differently if she got jobs done on time.

(Mary is asked which of the suggestions she would like to roleplay, roles are assigned and discussed, the roleplay is demonstrated, and discussion follows.)

The range of counseling techniques that are predominantly non-talking-through interventions, together with a description of the technique and learning style characteristics accommodated through the technique, are listed in Table 4.

Matching Individual Learning Styles With Appropriate Counseling Techniques at the Secondary School Level

An examination of the ways in which learning style characteristics change as students advance from grade to grade was conducted by Price (1980). A total of 3,972 students in grades 3–12 completed the *LSI* during the 1979-1980 school year. Some of the statistically significant findings revealed were:

- The higher the grade level, the more sound and light were preferred.
- The higher the grade level, the less preference was indicated for formal design.
- Self-motivation decreased during grades 7–8, but then a gradual increase was evidenced in each of the grades thereafter.
- The higher the grade level, the less teacher-motivated students became.
- The higher the grade level, the less motivated in general students were. The biggest shift was between grades 7–8 with grade 11 having the highest peak for being unmotivated.
- An overall decrease in the need for structure was evidenced the higher the grade.
- Although the junior high/middle school years are considered strong periods for peer influence, there was a greater need to learn/study alone in grades 9, 10, 11, and 12 than during any other interval.
- The highest need to learn with peers occurred in grades 6–8; the lowest need was in grade

Self-motivation decreased during grades 7–8, but then a gradual increase was evidenced in each of the grades thereafter

The highest need to learn with peers occurred in grades 6–8...

Table 4
Elementary School Counseling Techniques and Compatible Learning Style Preference Patterns

Techniques	Description	Learning Style Characteristics
Modeling	Observe the behavior of another person—live (counselor, friend, peer), or symbolic (videotape, films, books), or covert (imagine performing the desired behavior).	Visual perception; high need for structure.
Magic Circle	A technique for classroom use, where pupils and their teachers create an accepting climate in which they share their thoughts and feelings, develop confidence, solve problems, and learn to interact with each other effectively.	Informal, casual, relaxed design; auditory approach predominantly; both global and analytic approaches/preferences can be accommodated.
Art Therapy	The use of art activities (drawing, painting, clay modeling, collage construction) to provide emotional release and communicate nonverbally.	Tactual perceptual preference; low structure; accommodates a variety of sociological preferences (self, peer, adult).
Bibliotherapy	The student is given carefully selected material to read, based on age, emotional problems, and personality needs. Provides insight and understanding of self (Dunn & Smith, 1990).	Visual perceptual preference; high structure, high motivation and responsibility, self-sociological preference.
Block Play	The child uses a number of blocks to construct people, places, and things which she/he experiences and discusses the constructions with the counselor.	Kinesthetic perceptual preference; low structure; adult sociological preference.

Table 4 (Continued)
Elementary School Counseling Techniques and Compatible Learning Style Preference Patterns

Techniques	Description	Learning Style Characteristics
Photographs	The student is asked to bring photographs of self, family, friends to a counseling session. This technique can be used to elicit personal crises or problems from specific developmental periods.	Visual and auditory perceptual preferences; adult sociological preference; moderate structure.
Puppetry	A technique of manipulating small-scale figures to create or re-enact situations, or events, for therapeutic counseling.	Kinesthetic and visual perceptual preferences; low structure; right brain dominant; accommodates varied sociological preferences (adults, peers).
Psychodrama	Small groups extemporaneously dramatize situations or past experiences to afford catharsis and social relearning for the participants and/or protagonist.	Kinesthetic; visual, auditory, tactual preferences; low structure; high motivation; peer sociological preferences; right brain dominant.
Creative Writing	The student creates a real or imaginary story to share in individual or group counseling. The story should focus on feelings, situations, or concerns that the student is experiencing.	Tactual, auditory perceptual preferences; high motivation; high responsibility; accommodates varied sociological preferences.
Serial Drawing	The student creates a number of drawings, which successively tell a story that is shared visually and verbally in a counseling session.	Tactual, visual, and auditory perceptual preferences; right brain dominant.

Table 4 (Continued)
Elementary School Counseling Techniques and Compatible Learning Style Preference Patterns

Techniques	Description	Learning Style Characteristics
Mime	In a group counseling setting, students portray some aspect of their character or dramatize situation, through body language rather than words.	Peer sociological preference; visual perceptual strength; right brain dominant.
Charade Games	In a group counseling setting, students act out their feelings as they are related to specific theme areas (anger, failure, jealousy and guilt) while other group members try to interpret the message.	Peer sociological preferences; kinesthetic and visual perceptual strength; right brain dominant.
Mutual Storytelling Technique	The counselor creates a story that reflects a conflict situation that the student is experiencing. The student responds by resolving the conflict. The counselor them identifies other options that are more self-enhancing or effective and discusses these with the student.	Accommodates adult sociological preferences; right brain dominant; auditory perceptual strength; need for high structure.
Music Therapy	Musical activity can be used to elicit such behaviors and feelings as: self-awareness, creativity, group solidarity. Techniques range from: (a) responding to the musical environment with pleasure, (b) learning music skills for successful group participation, and (c) applying music skills in new situations.	Sensory awareness, particularly auditory; requires sound; high need for mobility.

Table 4 (Continued)
Elementary School Counseling Techniques and Compatible Learning Style Preference Patterns

Techniques	Description	Learning Style Characteristics
Musical Improvisation	A creative and spontaneous technique for helping the counselee express a feeling through music, either vocal or instrumental.	Involves divergent thinking, low need for conformity; accommodates a variety of perceptual strengths; requires sound.
Game Therapy	Games can be used in counseling to: (a) serve as a projective assessment tool, (b) set up a situation in which anxiety about certain conditions can be confronted and worked through, (c) "rules of the game" can be an analogy to understanding societal norms, (d) allow for the counselee's playfulness and fantasy activity to emerge, and (e) develop problem-solving and coping behaviors in the client.	Right brain dominant; high need for mobility; accommodates a variety of perceptual strengths; peer and group counseling preferences.
	After the student identifies an area of desired behavioral change (weight loss, control of anger, completing homework assignments, arriving in school on time), the counselor assists the student in charting the daily decrease or increase of this behavior in relation to the baseline (present incidents of the behavior) over a 2–6 week period.	Analytic, visual perception, high responsibility, high motivation, self-directed.
Reframing a Problem	The counselor assists a student in modifying or restructuring a problem in order to identify more self-enhancing ways to resolve it.	Analytic, verbal, self-directed.

12, followed by grade 9, with a slight increase in grades 10 and 11.

- The younger the student the more tactual and kinesthetic he/she was. Those modalities were followed by the development of visual strengths and, beginning with grades 5 and 6, the development of auditory strengths.

Students enrolled in secondary schools are predominantly in the fifth stage of development (early adolescence). During this period, the adolescent is engaged in a search for identity. This stage is characterized by rapid physical changes, significant conceptual maturity, and heightened sensitivity to peer approval. The adolescent begins to think about the world in new ways which have profound implications for counseling and learning. Conceptual development results in a more flexible, critical, and abstract view of the world so that counselors can utilize techniques which involve deep levels of cognitive processing.

The adolescent begins to think about the world in new ways which have profound implications for counseling and learning.

The fundamental question for the adolescent is: "Who am I and where do I belong?" Group identity and a strong sense of belonging facilitate psychological growth and serve as integrating forces. Negative resolution of these issues results in alienation, loneliness, and isolation.

Adolescent development has been described as a period of intense stress and turmoil. The adolescent is torn between a need to be a conformist and behave and think like peers and a need to develop individuality and uniqueness. Adolescents growing up in a nuclear and highly technological period are cognizant of how a rapidly changing world, filled with international tensions, impacts their future.

The adolescent is torn between a need to be a conformist and behave and think like peers and a need to develop individuality and uniqueness.

Possible problems that develop during adolescence are briefly cited as follows:

- Physical maturation challenges adolescents to develop heterosexual relationships which are based upon mutual respect and sound moral principles. There is a societal pressure to date,

be popular, and yet delay intimacy and marriage. Studies reveal that larger numbers of adolescents of both sexes become sexually active earlier, which sometimes results in teenage pregnancy, abortions, and venereal disease.

Intellectual development results in the ability to conceptualize, engage in inductive and deductive reasoning, and to evaluate the "grey" in issues....

- Intellectual development results in the ability to conceptualize, engage in inductive and deductive reasoning, and to evaluate the "grey" in issues, thus moving away from "either-or" and "black-white" thinking. Limited life experiences frequently result in difficulty in handling emotions, such as loss, anger, joy, or frustration. Emotional difficulties are sometimes reflected in depression, suicide attempts, perfectionism, compulsivity, substance abuse, eating disorders, or high levels of stress.
- Educational-vocational decision making should follow the adolescent's quest for an answer to "What shall I do with my life?" The adolescent needs to develop skills in self-assessment, problem-solving, vocational information, and job-seeking areas. Increased academic competition, competency testing, and coping with disappointment and failure can result in dropping out of high school and making vocational decisions prematurely.

The increased need for autonomy, independence, and disengagement from parents frequently results in family conflict....

- The increased need for autonomy, independence, and disengagement from parents frequently results in family conflict, limited or strained communication between adolescents and parents, and neglect and/or abuse. Family instability, reflected by increased divorce and separation, can result in teenage runaways/delinquency.
- Adolescents need to clarify their values and develop a philosophy of life that is "thought-through," rather than blindly accepting of parental and/or societal values. Adolescents

from culturally different families frequently experience difficulties in reconciling home and societal values.

- Peer friendships assume a critical importance as adolescents become conscious of status, cliques, and complex social expectations. Perceiving self as a "loner," "outsider," or "misfit" can seriously impact self-esteem.

Peer friendships assume a critical importance as adolescents become conscious of status, cliques, and complex social expectations.

The challenge of the secondary school counselor is to respond to the crises of adolescents while concurrently implementing a developmental-preventative program that is responsive to the psychosocial needs of the group-at-large. Secondary schools are frequently large, formal institutions which students can perceive as cold, uncaring, and alienating. In addition to developing and implementing a comprehensive counseling program, the counselor can play a major role in consulting with administrators and teachers to facilitate the establishment of a humanistic environment which is responsive to individual student needs and learning style differences.

...the counselor can play a major role in consulting with administrators and teachers to facilitate the establishment of a humanistic environment....

Elements of learning style which are compatible with selected counseling objectives and interventions for students at the secondary school level are outlined below according to the developmental tasks of early adolescence.

1. **Developmental Tasks: Self-Concept Development**

   Counseling Objective: To identify aggressive, assertive, and withdrawn behaviors and to help students assess themselves in these areas.

   Compatible Learning Style Elements:

   a. Sociological elements—peer preferences
   b. Physical elements—high mobility, visual and auditory strengths

c. Psychological elements—right brain dominant

Roleplay interpersonal relationships in group counseling using a variety of behavioral responses....

Counseling Intervention: Roleplay interpersonal relationships in group counseling using a variety of behavioral responses and encourage students to evaluate these vignettes in terms of "how they behave" versus "how they would like to behave."

2. **Developmental Tasks: Membership in Peer Group**

Counseling Objective: To identify high risk students who are in danger of dropping out of school and explore ways to become more involved in extracurricular activities, improve study skills, and define life goals.

Compatible Learning Style Elements:

a. Sociological elements—adult-oriented
b. Environmental elements—informal design
c. Physical elements—auditory and visual strengths

In individual counseling assist students...in studying and identifying extracurricular activities that would accommodate their learning style requirements.

Counseling Intervention: In individual counseling assist students in understanding their individual learning styles, applying these findings in the classroom, and in studying and identifying extracurricular activities that would accommodate their learning style requirements.

3. **Developmental Tasks: Increased need for Independence**

Counseling Objective: To assist students in resolving dependence/independence issues in relationships with parents.

Compatible Learning Style Elements:

a. Emotional elements—high structure
b. Sociological elements—peer preferences

c. Psychological elements—left brain dominant

Counseling Intervention: Use transactional analysis techniques in groups to analyze ego states (adult, child, parent) and game playing.

Use transactional analysis techniques in groups to analyze ego states (adult, child, parent) and game playing.

4. **Developmental Tasks: Develop Heterosexual Relationships; Continued Moral Development and Values Clarification**

Counseling Objective: To clarify values regarding premarital sex and to help adolescents deal with pressures for sexual intimacy.

Compatible Learning Style Elements:

a. Physical elements—high mobility, auditory, tactual, kinesthetic
b. Sociological elements—adult and peer preferences

Counseling Intervention: Initially schedule same gender groups, co-led by counselor and physical education teacher, in which group members discuss their values, explore the positive and negative aspects of various value systems, and roleplay situations in which values are tested.

...roleplay situations in which values are tested.

5. **Developmental Tasks: Educational and Vocational Decision Making**

Counseling Objective: To assist students in developing problem-solving and decision-making skills in relation to social, vocational, and educational concerns.

Compatible Learning Style Elements:

a. Emotional elements—accommodates varying degrees of motivation, persistence, and structure
b. Sociological elements—varied preferences for self, adult, peers

c. Physical elements—auditory, visual, tactual, kinesthetic

Counseling Intervention: In career education classes develop contract activity packages that accommodate a wide variety of learning styles. For example, in learning about colleges, utilize computer packages, interviews with college personnel, and profile data in order to gather and process information.

To illustrate the application of the learning style approach in counseling, a capsule case study is provided of Tom Adams, an 11th grade student 16 years of age. His *Learning Style Inventory* results are shown in Table 5. Tom's scholastic achievement has been sporadic with identifiable patterns of low performance in verbal usage and reading areas resulting in poor grades in social studies, English, and speech, and high achievement in mathematics and science. His parents are divorced and Tom works at a fast-food chain 20 hours weekly to help with family finances. His older brother terminated school in the 11th grade and is employed as a mechanic in a local gas station. Tom has indicated to his counselor in previous sessions that he has thought about leaving school to find full-time employment, but he likes some classes and generally sees value in obtaining a high school diploma. Tom is well-liked by his peers and is highly personable and attractive. Tom's counselor administered the *Learning Style Inventory* and decided to schedule a counseling session with him to interpret the results and discuss the implications of his learning style pattern. Excerpts from this counseling session are given below.

Tom's scholastic achievement has been sporadic with identifiable patterns of low performance in verbal usage and reading areas...and high achievement in mathematics and science.

Tom's counselor administered the Learning Style Inventory and decided to schedule a counseling session with him to interpret the results....

Counselor: It's good to see you, Tom. How have things been going for you these past few weeks in school and at home?

Table 5

INDIVIDUAL PROFILE

LEARNING STYLE INVENTORY

NAME: TOM ADAMS ID. NO.: DATE: 02-04-1991

SEX: M GRADE: 11 BIRTHDATE: 74 / 09 (YR / MO) GROUP NO.: 999

GROUP IDENTIFICATION: PRICE SYSTEMS INC SPECIAL CODE:

********** SCALE **********

SCORE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
RAW	25	12	23	4	24	15	12	12	24	12	12	20	9	15	21	25	10	12	15	12	12	15
STD.	74	49	66	33	37	43	48	49	52	48	44	72	49	44	41	66	38	53	47	44	30	37

********** PREFERENCE SUMMARY **********

	20	30	40	50	60	70	80	
1	Prefers Quiet		NOISE LEVEL		Prefers S-*-d			1
2	Prefers Dim		L-*-T		Prefers Bright			2
3	Prefers Cool		TEMPERATURE		-*-fers Warm			3
4	Prefers I-*-rmal		DESIGN		Prefers Formal			4
5	Low	-*-	MOTIVATION		High			5
6	Low		-*-PERSISTENT		High			6
7	Low		RES-*-SIBLE		High			7
8	Does Not Like		STRU-*-RE		Wants			8
9	Prefers Alone		ALONE/P-*-S		Prefers With Peers			9
10	Does Not Want Pres		AUTHOR-*- FIGURES		Wants Present			10
11	Does Not Learn In		-*-EVERAL WAYS		Prefers Variety			11
12	Does Not Prefer		AUDITORY		Pre-*-s			12
13	Does Not Prefer		V-*-AL		Prefers			13
14	Does Not Prefer		-*- TACTILE		Prefers			14
15	Does Not Prefer	-*-	KINESTHETIC		Prefers			15
16	Does Not Prefer		INTAKE		-*-Prefers			16
17	Prefers Evening	-*-	TIME OF DAY		Prefers Morning			17
18	Does Not Prefer		LATE MORN-*-		Prefers			18
19	Does Not Prefer		A-*-RNOON		Prefers			19
20	Does Not Prefer		-*- MOBILITY		Prefers			20
21	Lo-*-		PARENT MOTIVATED		High			21
22	Low	-*-	TEACHER MOTIVATED		High			22
	20	30	40	50	60	70	80	

CONSISTENCY: 88 PROFILE NO.: 2

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Tom: I'm hanging in there. I've been real busy with the job, school, and the computer club. If I didn't have to work, I'd spend more time with Mr. Medici after school. He's gotten me into computer programming and I've developed some really neat software packages that he uses in some of his general math classes.

Counselor: You sound really enthused about your work with computers and you seem to have tied that in nicely with your interest in math. If only there were more hours in your day!

Tom: Yeah, but I waste a lot of time too. On weekends I sleep til noon because I usually stay up real late on nights that I don't have school the next day.

Counselor: You're very much a night person. I discovered that when I looked over your *Learning Style Inventory* results. One of the things that we planned to talk about today was what those results mean in terms of how you learn best.

Tom: Okay. I'm ready to look at that.

Counselor: *(Using the LSI profile in Table 5.)* Let's focus on your strong preferences in learning—the low areas on the left and the high areas on the right. In terms of environmental stimuli, you have strong preferences for sound while learning, a warm temperature, and informal design.

Tom: That sounds pretty much on target. I study with the radio on—I do some of

my best thinking like that—it helps me concentrate better. I've always liked warmth—summers are my favorite time and winters are okay if it's warm inside. What does informal design mean?

Counselor: It's the opposite of formal design! Seriously, it means that you avoid studying or learning at a desk and chair and, if given a choice, you prefer to work in a lounge chair, on a carpeted area, or even read in bed.

Tom: Too bad I can't do that in school. Classrooms are a drag with all those hard desks and chairs. Your office is pretty neat, though. I like the whole set-up here.

Counselor: Most of the classrooms are pretty formal. I've been working with some teachers—your social studies teacher, for instance—to redesign some of the rooms. Mrs. O'Keefe does a lot of group work in social studies and we're working on setting aside some areas of that classroom for small, informal group work and independent study.

Tom: That's neat. We could do with more changes around here!

Counselor: Okay. Let's look at the next general areas—emotional and sociological. You have no strong preferences in these areas, Tom, which means that you're pretty flexible in terms of requiring moderate amounts of structure for learning and being average in terms of motivation, persistence, and responsibility. You seem to be able to

learn equally effectively by yourself, with peers in groups, or with adults.

Tom: I get it. It's not like a math test where your score is based on "right" answers.

Counselor: Exactly. Moving on to the physical stimuli, you work best in the evening, as we noted before. You are principally an auditory learner and you require intake while learning.

Tom: Yeah. Too bad they don't have night school here—ha! Seriously, I do my assignments after I get home from McDonald's—my head's clearer then and I can breeze right along. I know I'm auditory—I remember conversations almost by heart. I'm also good at remembering what's said in class and how it's said. What does that "intake" thing mean?

Counselor: Like the informal design, the intake requirement is sort of difficult to accommodate in school. Teachers sometimes get upset with the rattle of candy bar wrappers or the sound of gum chewing, but if you're discreet you can probably work that out.

Tom: Exactly. The name of the game is "Don't get caught." Can't you see me saying in Jonesy's class, "I need a joint to get me through this!"

Counselor: I know you're too smart for the drug scene, Tom. Getting back to your learning style requirements, it sounds like you're accommodating your preferences for learning pretty well at home. We might work out more accommodations here at school. Even

> in terms of course scheduling, it would make sense to schedule your difficult subjects, like English and social studies, in the afternoon when you're more alert, and leave the morning open for your electives.

As indicated in this counseling session, accommodating learning style preferences within the classroom can result from counselor and teacher consultation on each of the learning style elements. In terms of counseling, Tom's preference for auditory modalities, together with his moderate need for structure, suggests that a wide range of traditional, "talking-through" counseling approaches can be used including reality therapy, client-centered, cognitive, Adlerian, behavioral, and transactional analysis.

...accommodating learning style preferences within the classroom can result from counselor and teacher consultation on each of the learning style elements.

For other adolescent students, whose preferences are not auditory, a variety of interventions that accommodate visual, tactual, and kinesthetic preferences are outlined in Table 6. Additionally, techniques described in Table 4, such as art therapy, bibliotherapy, and psychodrama can be adapted to an adolescent level.

Providing for the Learning Style Preferences of Special Populations

Although the learning style model is based on the premise of individual differences, research indicates that various special groups have a core of learning style preferences that distinguishes them from others. Research findings for the gifted, physically disabled, multicultural groups, and school dropouts indicate a clustering of special characteristics.

Gifted Students

Selected learning style elements discriminate between gifted and non-gifted students. Among

Selected learning style elements discriminate between gifted and non-gifted students.

Table 6
Secondary School Counseling Techniques and Compatible Learning Style Preference Patterns

Techniques	Description	Learning Style Characteristics
Systematic Desensitization	An anxiety-reduction strategy involving: • Verbal set (overview of technique). • Identification of emotion-provoking situations. • Hierarchy construction. • Coping responses. • Imagery assessment. • Scene presentation. • Homework and follow-up.	Visual perception; analytical and deductive approach (left hemisphere).
Guided Imagery	The counselor asks counselees to relax, close their eyes, and create a mental picture of an event or experience. Clients share the imagery in an individual or group counseling session.	Visual, auditory perceptual preferences; right brain dominant; average need for structure; varied sociological preferences.
Autobiographical	The student writes an autobiography, describing values, interests, goals, family, past events, etc., and shares it in a counseling session.	Tactual and auditory preferences; high structure; high responsibility.
Systematic Relaxation	In an individual or group counseling setting, the counselor directs students to tense and then relax all parts of the body progressively. Students are encouraged to apply this strategy in situations in which they feel anxious, tense, or nervous.	Accommodates either peer or adult sociological preferences; kinesthetic perceptual strength; need for high structure.

Table 6 (Continued)
Secondary School Counseling Techniques and Compatible Learning Style Preference Patterns

Techniques	Description	Learning Style Characteristics
Methaphor, Parable, Allegory	Figurative language in which concepts are described symbolically or through stories or analogies.	Visual orientation; right brain dominant; global approach. May be utilized in individual, peer, or group counseling.
Free Writing	Counselees are instructed: "Conditions of tension, confusion, hostility, joy or excitement can be released through writing your feelings and thoughts freely. Keep a log of your writings to share in individual or group counseling."	Tactual perceptual strength; highly motivated and persistent; minimum need for structure.

...learning style is a statistically stronger and more reliable predictor of reading achievement than IQ.

elementary school youth, Kaley (1977) found that learning style is a statistically stronger and more reliable predictor of reading achievement than IQ. The higher a child's reading level, the more field independence is evident; the lower the reading level, the more field dependence is present. Field independent persons tend to pursue active, participative approaches to learning, while field-dependent persons more often use spectator approaches. Hudes, Saladino and Siegler (1977) found significant relationships among giftedness, achievement, and self-concept in third grade students. Students with high self-concept tended to be high achievers and gifted, while those with low self-concept tended to be low achievers and non-gifted.

...gifted children have well-integrated perceptual strengths, meaning that they can learn through varied learning channels including auditory, visual, tactile, and kinesthetic.

A number of researchers investigated the perceptual strengths of gifted youth. Barbe and Milone (1982) found that gifted children have well-integrated perceptual strengths, meaning that they can learn through varied learning channels including auditory, visual, tactile, and kinesthetic. There is some evidence that perceptual preferences are developmentally related. Dunn and Price (1980b) found that gifted junior high/middle school students had strong visual, tactile, and kinesthetic preferences and low auditory preferences. It would appear that tactile and kinesthetic modalities develop initially, followed by visual modalities (developed during puberty), and lastly auditory modalities (developed during adolescence or adulthood) (Dunn, Carbo, & Burton, 1981; Keefe, 1979).

...gifted children prefer low structure and flexibility in learning.

The preference for high versus low structure is another element which discriminates between gifted and non-gifted youth. Dunn and Price (1980) found that gifted children prefer low structure and flexibility in learning. Lyne (1979) studied adults and college students and found a relationship between cognitive development and structure. Adults at the lower stages of cognitive development preferred a highly structured learning format, while those at the

high stages of cognitive development preferred more flexibility and diversity in learning.

In addition to the learning style preferences discussed previously, Dunn and Price (1980) found that gifted elementary school children tend to prefer a formal design and are highly persistent but low in responsibility or conformity. Griggs and Price (1980b) found that gifted junior high/middle school students are highly persistent, more self-motivated than teacher-motivated, prefer a quiet learning environment, and prefer to learn alone rather than with peers. Perrin (1984) also reported the strong learning alone preferences of young gifted children, but found that when grouped with other gifted youngsters, who apparently were their true peers, gifted youth achieved significantly higher scores on rote memory and problem-solving tasks.

...gifted elementary school children tend to prefer a formal design and are highly persistent but low in responsibility or conformity

To summarize, the research reveals a pattern of core learning style preferences among gifted students including: (1) independent (self) learners; (2) internally controlled or field independent; (3) persistent; (4) perceptually strong; (5) nonconforming; and (6) highly self-motivated.

Table 7 summarizes the *Learning Style Inventory* results for George Edwards. He is a sixth grade student with an overall IQ of 136 on the Stanford-Binet. There are nine elements on the *LSI* that discriminate significantly in terms of his learning style preferences.

Generally, gifted students tend toward nonconformity in terms of thought, attitude, and behavior. Educators need to recognize and support this uniqueness, which can take many forms.

He is low in the area of responsibility which is highly correlated with nonconformity, innovation, divergent thinking, and creativity. Generally, gifted students tend toward nonconformity in terms of thought, attitude, and behavior. Educators need to recognize and support this uniqueness, which can take many forms.

George is perceptually strong; hence a broad range of counseling techniques can be utilized including traditional auditory approaches, visual approaches such as reading and imagery, and

Table 7

INDIVIDUAL PROFILE

LEARNING STYLE INVENTORY

NAME: GEORGE EDWARDS ID. NO.: DATE: 02-04-1991

SEX: M GRADE: 6 BIRTHDATE: 78 / 04 YR / MO GROUP NO.: 999

GROUP IDENTIFICATION: PRICE SYSTEMS INC SPECIAL CODE:

•••••••••••••••••••••••• SCALE ••••••••••••••••••••••••

SCORE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
RAW	15	20	15	12	40	17	4	12	12	13	12	8	15	25	35	15	30	12	15	12	12	17
STD.	52	71	44	56	69	50	24	49	34	48	44	29	71	69	75	44	80	53	47	44	30	43

•••••••••••••••••• P R E F E R E N C E S U M M A R Y ••••••••••••••••••

	20	30	40	50	60	70	80	
1	/	Prefers Quiet	/	NOISE L-•-L	/	Prefers Sound	/	1
2	/	Prefers Dim	/	LIGHT	/	Prefer-•-right	/	2
3	/	Prefers Cool	/	-•-EMPERATURE	/	Prefers Warm	/	3
4	/	Prefers Informal	/	DESIGN -•-	/	Prefers Formal	/	4
5	/	Low	/	MOTIVATION	/	-•-gh	/	5
6	/	Low	/	PERSI-•-NT	/	High	/	6
7	/	-•- Low	/	RESPONSIBLE	/	High	/	7
8	/	Does Not Like	/	STRU-•-RE	/	Wants	/	8
9	/	Prefers Al-•-	/	ALONE/PEERS	/	Prefers With Peers	/	9
10	/	Does Not Want Pres	/	AUTHOR-•- FIGURES	/	Wants Present	/	10
11	/	Does Not Learn In	/	-•-EVERAL WAYS	/	Prefers Variety	/	11
12	/	Does N-•-Prefer	/	AUDITORY	/	Prefers	/	12
13	/	Does Not Prefer	/	VISUAL	/	Pr-•-rs	/	13
14	/	Does Not Prefer	/	TACTILE	/	-•-fers	/	14
15	/	Does Not Prefer	/	KINESTHETIC	/	Prefers-•-	/	15
16	/	Does Not Prefer	/	-•- INTAKE	/	Prefers	/	16
17	/	Prefers Evening	/	TIME OF DAY	/	Prefers Morning	-•	17
18	/	Does Not Prefer	/	LATE MORN-•-	/	Prefers	/	18
19	/	Does Not Prefer	/	A-•-RNOON	/	Prefers	/	19
20	/	Does Not Prefer	/	-•- MOBILITY	/	Prefers	/	20
21	/	Lo-•-	/	PARENT MOTIVATED	/	High	/	21
22	/	Low	/	-•-CHER MOTIVATED	/	High	/	22
	20	30	40	50	60	70	80	

CONSISTENCY: 100 PROFILE NO.: 3

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tactile/kinesthetic approaches such as psychodrama. He prefers bright light while learning. His time of day preference is morning and he is a highly motivated self-learner who prefers large doses of independent study.

A preference for independent learning may result in problems with authority; George is frequently viewed as challenging, confrontational, and outspoken by some of his teachers. Finally, George is highly persistent which implies indefatigability, a long attention span, and ability to sustain interest and involvement over a period of time. Gifted students generally thrive on projects that demand persistence—they welcome challenging and complex tasks. Renzulli (1980) observed that gifted persons are highly product oriented in that they attack a problem because they are attempting to produce a new imaginative product. This suggests that the curriculum and the guidance program need to focus on high level cognitive processing, reasoning, abstract thinking, and creative problem solving (Milgram, 1989).

...the curriculum and the guidance program need to focus on high level cognitive processing, reasoning, abstract thinking, and creative problem solving

Students With Disabilities

A number of correlational studies have been conducted which explored the differences and similarities among students with disabilities. Dean (1982) compared the learning styles of educable mentally retarded (EMR) and learning disabled (LD) students enrolled in grades 4–12 in four Mississippi school districts. She found that the elements of "learning with adults" and "functions best in late morning" distinguished these groups from mainstreamed students. Despite the fact that elementary schools conventionally provide reading instruction early in the morning when these students are not experiencing an energy high, Dean concluded that these elements are not crucial to their academic success. However, she did recommend that EMR and LD groupings be determined according to their learning style preferences

rather than handicapping conditions. Two years later, Pederson (1984) assessed the learning style preferences of learning disabled, gifted, and other students to identify differences. She found that five elements of learning style discriminated among the three groups including intake, tactual, authority figures present, learning alone, and responsibility, and suggested that learning style preferences of these three groups of students can become a sound basis for making administrative decisions.

...learning style preferences of these three groups of students [learning disabled, gifted and others] can become a sound basis for making administrative decisions.

The *Learning Styles Inventory* was administered to 86 physically disabled students at the Human Resources Center in Albertson, New York. The group included 46 males (53%) and 40 females (47%), enrolled in grades 7–12 with an age range of 13 to 21 years. Their physical disabilities included 24 spina bifida, 22 cerebral palsy, ten muscular dystrophy, five spina bifida manifesta, four DYS autonomia, three osteogenesis imperfecta, and 18 unclassified.

The follow preference patterns were identified in the group overall:

Adult-motivated	88%
Teacher-motivated	64%
Highly motivated	57%

Overall, the group rejected the late morning as a time preference (84%); indicated a low need for mobility (41%); had no requirement for intake while learning (42%); and generally identified auditory-visual perceptual strengths (50%) in comparison to tactile-kinesthetic perceptual strengths (36%). These findings are contradictory to *LSI* results of other adolescents who generally indicate strong peer preferences (as opposed to adult or teacher preferences), tactile-kinesthetic perceptual strengths, and late morning and afternoon learning preferences.

Inter-group student preferences are summarized as follows:

1. **Spina bifida manifesta** prefer a high noise level (60%); formal design (60%); exhibit

high motivation (60%); and are adult-motivated (100%).

2. **Osteogenesis Imperfecta** are responsible (67%); prefer to work in the afternoon (67%); are teacher-motivated (100%); reject kinesthetic modalities (67%); and reject late morning as a learning preference (67%).
3. **DYS autonomia** have a preference for strong light (75%); demonstrate persistence (75%); are visually oriented (50%); require intake (50%); are adult-motivated (100%) and teacher-motivated (75%); and reject late morning as a time preference (100%).
4. **Cerebral palsied** are highly motivated (68%); teacher-motivated (68%); and reject mobility (54%).
5. **Spina bifida** are adult-motivated (96%); teacher-motivated (75%); reject late morning (92%) and mobility (50%) as learning preferences.
6. **Muscular dystrophy** prefer formal design (60%); reject kinesthetic modalities (60%) and late morning learning (90%).

Caution should be used in generalizing these results because some of the physically disabled groups had numbers fewer than ten. However, the findings overall suggest that the learning style preferences of physically disabled students differ significantly from the preferences of other adolescents on important elements.

...the learning style preferences of physically disabled students differ significantly from the preferences of other adolescents on important elements.

Table 8 summarizes the learning style results of Susan King. She is 14 years of age, enrolled in the eighth grade, and has cerebral palsy. There are seven important elements that define her learning style.

She has a high level of motivation, which is enhanced through teacher mediation. Susan needs consistent and periodic reinforcement during learning and counseling and she would respond well to behavioral counseling using contracting, token systems and external monitoring. She requires a well-lighted

Table 8

INDIVIDUAL PROFILE

LEARNING STYLE INVENTORY

NAME: SUSAN KING ID. NO.: DATE: 02-04-1991

SEX: F GRADE: 8 BIRTHDATE: 76 / 05 GROUP NO.: 999
YR / MO

GROUP IDENTIFICATION: PRICE SYSTEMS INC SPECIAL CODE:

********** SCALE **********

SCORE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
RAW	15	20	15	20	40	15	12	12	24	20	14	12	9	15	7	15	18	12	25	4	12	17
STD.	52	71	44	79	69	43	48	49	52	74	51	44	49	44	20	44	55	53	76	22	30	43

********** P R E F E R E N C E S U M M A R Y **********

	20	30	40	50	60	70	80	
1	/	Prefers Quiet	/	NOISE L-*-L	/	Prefers Sound	/	1
2	/	Prefers Dim	/	LIGHT	/	Prefer-*-right	/	2
3	/	Prefers Cool	/	-*-EMPERATURE	/	Prefers Warm	/	3
4	/	Prefers Informal	/	DESIGN	/	Prefers Formal -*-		4
5	/	Low	/	MOTIVATION	/	-*-gh	/	5
6	/	Low	/	-*-PERSISTENT	/	High	/	6
7	/	Low	/	RES-*-SIBLE	/	High	/	7
8	/	Does Not Like	/	STRU-*-RE	/	Wants	/	8
9	/	Prefers Alone	/	ALONE/P-*-S	/	Prefers With Peers	/	9
10	/	Does Not Want Pres	/	AUTHORITY FIGURES	/	Wants Pre-*-t	/	10
11	/	Does Not Learn In	/	SEVERA-*-AYS	/	Prefers Variety	/	11
12	/	Does Not Prefer	/	-*- AUDITORY	/	Prefers	/	12
13	/	Does Not Prefer	/	V-*-AL	/	Prefers	/	13
14	/	Does Not Prefer	/	-*- TACTILE	/	Prefers	/	14
15	*-	Does Not Prefer	/	KINESTHETIC	/	Prefers	/	15
16	/	Does Not Prefer	/	-*- INTAKE	/	Prefers	/	16
17	/	Prefers Evening	/	TIME OF DAY-*-	/	Prefers Morning	/	17
18	/	Does Not Prefer	/	LATE MORN-*-	/	Prefers	/	18
19	/	Does Not Prefer	/	AFTERNOON	/	Prefers -*-	/	19
20	/-*-	oes Not Prefer	/	MOBILITY	/	Prefers	/	20
21	/	Lo-*-	/	PARENT MOTIVATED	/	High	/	21
22	/	Low	/	-*-CHER MOTIVATED	/	High	/	22
	20	30	40	50	60	70	80	

CONSISTENCY: 100 PROFILE NO.: 4

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environment and formal design; her peak period for counseling is afternoon. Due to her physical disability, she rejects kinesthetic counseling approaches or approaches that involve mobility.

School Dropouts

Most school districts throughout the nation have focused on dropouts at one time or another and devised interventions for responding to the special needs of this population. Dropping out of school is a complex decision related to a number of familial, personal, and socioeconomic factors that operate independently from learning style characteristics. The findings reported here are limited to those that address the learning style needs of dropouts as a group and are derived from the research of Gadwa and Griggs (1985), Johnson (1984), and Thrasher (1984).

Dropping out of school is a complex decision related to a number of familial, personal, and socioeconomic factors that operate independently from learning style characteristics.

1. **High Mobility**. In comparison to pupils who remain in school, dropouts specify a need for mobility while learning. Fadley and Hosier (1979) observed that children often were referred to school psychologists because of their hyperactivity; their teachers complained that such youngsters were unable to sit quietly and pay attention in class. After extensive study, those psychologists concluded that most students referred to them were not clinically hyperactive; instead, they were normal children in need of movement. During the same period, Restak (1979) reported that over 95% of hyperactives are males, noting that conventional classroom environments do not provide male students with sufficient outlet for their normal movement needs. Once researchers began equating hyperactivity with students' normal need for mobility, they experimented with permitting opportunity for learning while engaged in movement and found that students' academic achievement improved significantly

...most students referred to them [school psychologists] were not clinically hyperactive; instead, they were normal children in need of movement.

(Della Valle, 1984; Hodges, 1985). This research suggests that dropouts as a group need activity-oriented instruction such as team learning, circle of knowledge, brainstorming, and case study approaches (Dunn & Dunn, in press b).

...dropouts as a group need activity-oriented instruction such as team learning, circle of knowledge, brainstorming, and case study approaches

2. **Learn in Several Ways**. Dropouts indicate a preference for a variety of sociological groupings for learning including self, pairs, peers, and teachers. A number of studies reported improved academic achievement when students were taught in groupings congruent with their expressed preferences (DeBello, 1985; Martin, 1977; Miles, 1987; Perrin, 1984).
3. **Evening Preference**. Many school systems teach reading or mathematics in the early morning, assuming that this is the time when students are most alert. Dropout students seem to experience extremely low energy levels early in the morning but become increasingly energetic toward afternoon. Carruthers and Young (1980) found that junior high/middle school underachieving pupils, who preferred learning in the afternoon but had been assigned to morning math classes, became better disciplined, more motivated, and demonstrated improved achievement scores when they were assigned to afternoon math classes. Lynch (1981) found that accommodating time preference was a crucial factor in the reversal of truancy patterns among secondary school students.

Dropout students seem to experience extremely low energy levels early in the morning but become increasingly energetic toward afternoon.

4. **High Motivation**. Motivation measures whether a student is positive or negative about academic learning. All three studies found that high school students were essentially similar on motivation while students in alternative schools were significantly less motivated.
5. **Informal Design**. High school dropouts specify a preference for learning in an informal

High school dropouts specify a preference for learning in an informal setting with cushions, couches, and carpeting....

setting with cushions, couches, and carpeting in contrast to a desk and chair. Hodges (1985) and Shea (1983) found that accommodating student preferences for design results in increased academic achievement.

6. **Perceptual Preferences**. Dropouts are significantly more auditory, tactual, and kinesthetic than either alternative or traditional students, suggesting that they learn through listening, speaking, hands-on learning experiences, and activity-oriented approaches.
7. **Light**. Students who drop out of high school tend to reject bright lighting, preferring either dim or moderate illumination. Light may be more than a mere irritant to some youth; it may actually deter academic achievement. Dunn and Dunn (1978) found that specific learning style characteristics differentiated between good and poor readers and light was one of those elements.

Students who drop out of high school tend to reject bright lighting....Light may be more than a mere irritant to some youth; it may actually deter academic achievement.

School counselors are key people in identifying potential dropouts and must work with parents, teachers, and administrators to develop strategies, policies, and interventions which are responsive to the characteristics and needs of this special population. Counselors should have a thorough understanding of the reasons for leaving school, so they can directly influence the personal, familial, and educational factors associated with dropping out.

Personal factors. Early identification of potential dropouts is critical so that interventions can be devised which reverse the cumulative effects of low self-esteem, feelings of alienation, and low aspirational level. Counselors can work with classroom teachers in a consultative role to assist in assessing students' ability and achievement levels and devising individual educational plans (IEP's) to help youth achieve and succeed. A major component of the IEP should be counseling, which is directed at exploring

Counselors can work with classroom teachers in a consultative role to assist in assessing students' ability and achievement levels and devising individual educational plans (IEP's) to help youth achieve and succeed.

personal goals, aspirations, and efficacy of the student. Students identified as high risk should be flagged at the transitional grades and an effective articulation plan should be devised to provide a support system to these students during their transition between schools.

The counselor needs to influence the parental value system away from apathy and toward strong support for education.

Familial factors. In the case of high-risk students there is a need for improved communication between the home and school. The counselor needs to influence the parental value system away from apathy and toward strong support for education. Through group work with students and parents the counselor can assist families in crisis—those experiencing unemployment, divorce, or violence. Counselors need to help establish support groups within the school that recognize the needs of students in crisis and provide them with coping strategies.

Student learning preferences should be congruent with the strategies and interventions utilized by the counselor and teacher.

Educational factors. The counselor needs to be cognizant of the finding that students prefer to learn in different ways. Research indicates that dropout students are distinguishable as a group from traditional and alternative students on some learning style variables. The learning style preferences of students need to be diagnosed, and provisions for these learning preferences need to be made within the classroom. Student learning preferences should be congruent with the strategies and interventions utilized by the counselor and teacher. Case conferences, which focus on the individual learning style preferences of high risk students, can be scheduled with selected teachers, administrators, and the counselor to review these preferences and plan learning strategies that are compatible with these preferences. For example, the finding that dropout students prefer to learn with peers rather than alone indicates that small group projects with interdependent tasks are preferable to individual homework assignments.

Counselors should be aware of the need to make the educational system responsive to high risk students.

Counselors should be aware of the need to make the educational system responsive to high risk students. Almost half of the students who were

interviewed in the Edmonds School project had dropped out of school two or more times (Gadwa & Griggs, 1985). Each time they re-enrolled with the intent of trying harder to succeed but encountered the same problems and didn't know how to resolve them. Counselors should establish re-entry groups which focus on helping students identify strategies for coping with and overcoming problems associated with the traditional educational system. The counselor's energies need to be directed toward the long-term goal of developing a more humanistic, individualized, and flexible educational climate while assisting high-risk students with their immediate problems.

In summary, the high dropout rate needs to be reduced through the combined efforts of the home, school, and community. Attention to learning style factors seems to be one important area upon which to focus these efforts. The ability to attract and hold teenagers in high school through graduation is critical to a nation committed to equal educational opportunity, full employment, and individual fulfillment (Bell, 1984).

The ability to attract and hold teenagers in high school through graduation is critical to a nation committed to equal educational opportunity, full employment, and individual fulfillment....

Multicultural Groups

High School dropouts are more likely to be blacks, Hispanics and American Indians rather than whites or Asian Americans (Paulu, 1987), and they are over-represented in vocational and general tracks and in special education (Oakes, 1985). Indeed, the high rate of underachievement among minorities prompted suggestions that "teachers should teach to the learning styles of black children" (Hale-Benson, 1982). Allegations that minorities may learn differently from whites led to the establishment of a New York State Board of Regents panel to investigate that concept (D'Antonio, 1988). Ultimately, that panel of representatives from diverse disciplines reported that no conclusive evidence supported the

controversial theory that blacks shared distinctly different learning styles from those of whites but that research in this area is needed (Gordon, 1988). The panel's conclusions were based on examination of limited published studies and personal testimony and its budget permitted only one and a half days of deliberation.

...no conclusive evidence supported the controversial theory that blacks shared distinctly different learning styles from those of whites... research in this area is needed....

During the 1980s, nine research studies were completed to determine whether variances existed between and among different cultural groups within and outside the United States (Table 9). Subjects in these studies ranged from children to adults in rural, urban, and suburban areas of the United States and foreign countries who were of lower or middle socio-economic status. The cultural groups represented within the United States were black, white, Greek, Chinese, and Mexican; the groups outside the United States were Cree Indians from Manitoba, Puerto Ricans, Jamaicans, Bahamians, and Asians from Singapore. Although the findings in these correlational studies were not always compatible, clear differences emerged among the groups with respect to learning style preferences. This research is too extensive to report here but a synthesis of findings together with the educational implications can be found in Dunn and Griggs (1990).

Lastly, in addressing the needs of special populations it is important to recognize that assessment should extend beyond group characteristics, because within each group there are broad differences as well as similarities in terms of learning style preferences.

...assessment should extend beyond group characteristics, because within each group there are broad differences as well as similarities in terms of learning style preferences.

Description of School Counseling Programs That Use Learning Style Preferences in Counseling

This section describes how *practicing* counselors across the country utilize learning styles in individual counseling, career education, freshman orientation,

Table 9
Cross-Cultural Studies of Students' Learning Styles

Study	Geographic Region	Grade Level	Cultural Group
Yong	Chicago, IL	Elementary School	African American; Mexican American; Chinese American
Jalali (1989)	Long Island, NY (suburban middle class)	4, 5, 6	Afro-American
	Manhattan, NY (urban)	4, 5, 6	Chinese American
	Rural Texas (lower class)	4, 5, 6	Mexican American
	Queens, NY (middle class)	4, 5, 6	Greek American
Sims (1988)	Los Angeles, CA (urban lower class)	3, 4	Black American
	Oregon (rural migrant)	3, 4	Mexican American
	Oregon (rural lower-middle class)	3, 4	white
Lam-Phoon (1986)	Lansing, MI (middle class)	College	Asian American, white
	Singapore (middle class)	College	Asian
Roberts (1984)	Bahama, Jamaica	11, 12	African descent
Mariash (1983)	Northeast Manitoba (rural; ESL)	Elementary School	Cree Indian
Vazquez (1985)	Puerto Rico (high-risk urban)	College	Puerto Rico
Jacobs (1987)	Southern U.S.: high, middle, and low achievers	Middle School	Afro-American, Euro-American
	Southern	6, 7	Afro-American, Euro-American
Dunn & Price (in press)	Texas (rural low-middle class)	4, 5	Mexican American, whites

Note. ESL = English as second language.

course scheduling, study skills, tutoring and academic advisement, teacher inservice, and program development with underachievers.

Troutdale, Oregon

Dennis Bryson, a counselor at Columbia High School in Troutdale, Oregon, describes how he uses learning styles in individual counseling as follows:

> After working as a counselor in a high school that emphasizes learning styles, I have found that there are several ways that learning styles can be utilized by the counselors to help students who are having difficulty in the classroom.
>
> As many counselors are aware, one of the initial reactions of a student who is having classroom problems is to blame the teacher. Learning styles allow the counselor to put the problem in a broader perspective and to help the students to accept the responsibility for their role as learners by focusing on factors other than personality issues that contribute to the problem.
>
> Another factor that can lead to classroom problems is low self-esteem. Learning styles allow the students to see themselves in more than one perspective. For example, if a student is primarily a visual learner but is in a math class in which the teacher relies on the lecture method with no visual aids, then the counselor can help the student to understand why he/she is experiencing difficulty. Together they can explore ways the student can use individual strengths to adapt teaching techniques. In this way learning styles can help the student develop an appreciation of his/her own learning style and uniqueness as an individual.

...there are several ways that learning styles can be utilized by the counselors to help students who are having difficulty in the classroom.

Learning styles allow the students to see themselves in more than one perspective.

As counselors we are often trying to aid students who are dealing with problems in the classroom. I have found that by using learning styles I can help the student to see the problem in an objective manner, to accept more responsibility for learning, and to gain an appreciation for personal strengths. The use of learning styles has proved to be a positive tool in problem solving.

...by using learning styles I can help the student to see the problem in an objective manner, to accept more responsibility for learning, and to gain an appreciation for personal strengths.

Richton Park, Illinois

Caryl Barbknecht, a counselor at Rich South High School in Richton Park, Illinois, has developed an *Individual School and Career Program (ISCP)* to provide each student with a personal educational-vocational plan designed to respond to major interests, aptitudes, and aspirations. Published in an attractive, well-designed manual entitled Horizon, the *ISCP* suggests possible future directions for adolescents through activities and information outlined in a fairly structured, four-year counseling program. An integral component of the *ISCP* is a *Learning Style Inventory (LSI)* which enables both students and their teachers to accommodate individual style preferences.

In a freshman advisory program in the Highland Park High Schools in Illinois, the counselors have developed a guidance curriculum that includes the interpretation of the *LSI* for students to help them understand how they learn best. With this information, students are encouraged to do their homework in accordance with their learning styles and to understand why they are experiencing difficulties in certain classes. When creating course schedules, counselors attempt to schedule students' most difficult subjects during their preferred time of day.

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State of Maryland

The Maryland State Department of Education provides a teacher mini-grant program that compensates teachers with a small stipend to encourage experimentation in classroom strategies to increase student achievement and decrease classroom disruptions due to behavior problems. The stipend is intended to acknowledge the amount of extra time required for the teacher's classroom preparations.

Charlotte Saji, a counselor at Atholton High School in Columbia, Maryland, has implemented the mini-grant program, as summarized in the diagram on page 85.

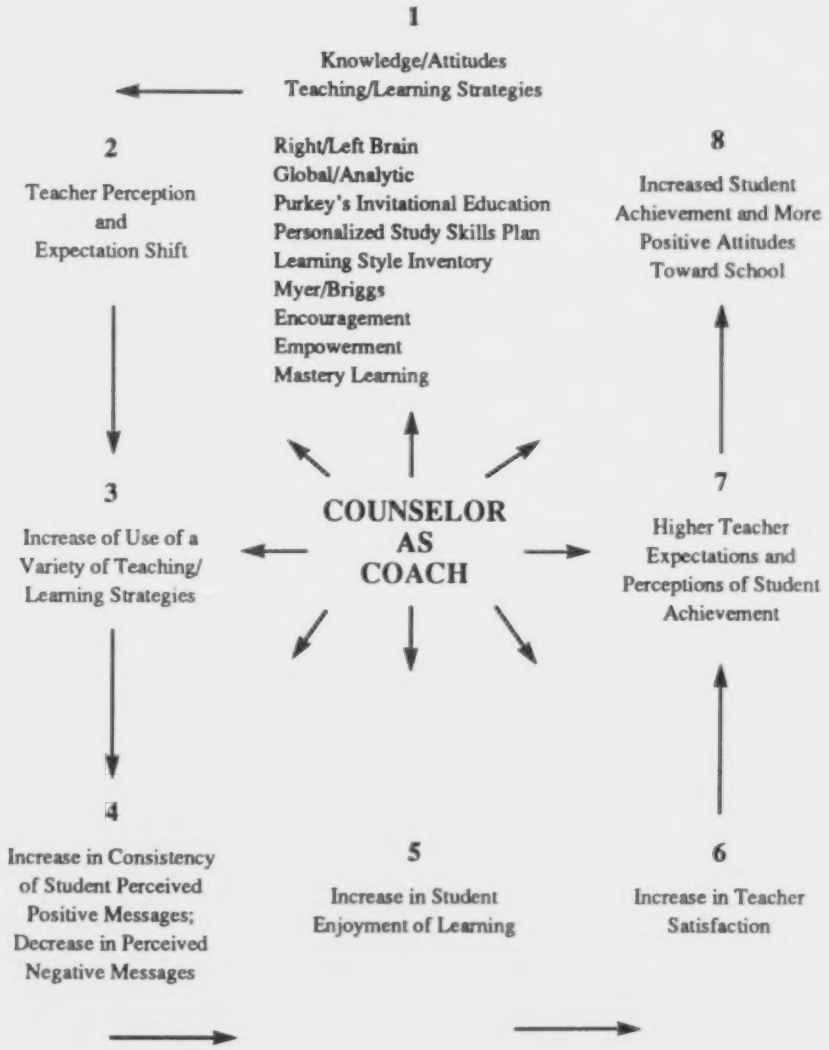
The counselor met with eight high school teachers who expressed an interest in experimenting with teaching and learning strategies within the classroom. Following teacher inservice in the area of learning styles and complementary teaching strategies, each teacher selected specific units of study and developed multisensory instructional materials and a variety of learning activities to achieve learning objectives. In most cases the counselor administered and interpreted the *Learning Style Inventory* and other instruments in the classroom to confirm the appropriateness of various strategies.

...each teacher selected specific units of study and developed multisensory instructional materials and a variety of learning activities to achieve learning objectives.

Strategies were monitored with the counselor consulting with teachers periodically. Teachers kept journals of student changes in learning patterns that were used for discussion in counselor conferences. Ms. Saji cites the following results as reported by teachers:

- Improved academic achievement
- Increased creativity as an end-of-year review was led by students
- Improved grades as a result of alternative testing procedures
- Decreased classroom disruptions
- Improved classroom climate

Figure 1
Increasing Student Achievement Using Teaching/ Learning Styles or Strategies



Indianapolis, Indiana

Luanne Reabe, a secondary school counselor at Franklin Central High School in Indianapolis, Indiana, has developed a program for underachieving adolescents entitled *Progress Learning Under Styles (PLUS)*. The program was designed to assist 25 students on a daily basis. Students were selected for *PLUS* by counselors and teachers based on the following criteria:

- Average scholastic ability.
- Failing two or more subjects.
- Enrolled in ninth or tenth grade.
- Expressed interest of student and parents.

Five students per period are assigned to a learning center which is equipped with a Commodore 64 computer and software, tape recorder and earphones, tapes, a small library, and materials to create tactual-kinesthetic learning aids. The room design has formal and informal areas, bright and dim sections, private work areas and group work areas, and students are allowed to snack. Students are counseled about their learning style preferences and the learning center provides a range of environmental, physical, sociological, and emotional stimuli to accommodate a range of preferences. Ms. Reabe reports that at the end of the academic year overall student grades improved in 67% of their classes. The coordinator of the learning center states:

...the learning center provides a range of environmental, physical, sociological, and emotional stimuli to accommodate a range of preferences.

> Teaching has never been as challenging or as rewarding for me. PLUS involves working with 30 different teachers, 25 students, and approximately 20 subjects every day. Sometimes it is frustrating and difficult to keep up with the many tactual-kinesthetic materials which need to be developed for each subject. The rewards are great, however, when students finally realize that they are not dumb.

The rewards are great, however, when students finally realize that they are not dumb.

Queens, New York

Dr. Patricia Hudson, formerly a counselor at St. Francis Preparatory High School in Queens, New York, describes a tutoring program that she developed, based on matching tutors and tutees on key learning style traits, as follows:

> One spring morning I was advised that it was my turn to direct the school's tutoring program for the following year. A tutoring program had been in place, but it seemed to require an endless number of forms, its dropout rate was very high, creative students often withdrew, tutors were trained minimally, and what was offered depended, to a great extent, on the interest of the counselor in charge that year.
>
> My first step was to require at least four training sessions for each tutor: that took selling, for training had not been required previously. We began identifying how each tutor studies—in a formal or informal area; with bright or soft light; with or without snacks, friends, music, or breaks; and by reading, taking notes, listening to tapes or recorded lectures, and so forth. Several of the prospective tutors giggled and nonverbally communicated that they considered the discussion irrelevant—an attitude that changed radically as the various participants described their unique study habits.
>
> Many listened to music while they studied; a few used ear phones to block out the TV in the next room. A young man did his "important" studying at his grandmother's home because she fed him as he worked. The most unique contribution was a very shy fellow who said he sometimes liked to study with his father's fishing hat on so he could feel comfortable. In

We began identifying how each tutor studies—in a formal or informal area; with bright or soft light; with or without snacks, friends, music, or breaks....

A young man did his "important" studying at his grandmother's home because she fed him as he worked.

the midst of laughter and some very entertaining descriptions of study habits, the participants got the message that learning styles are individual, but that patterns do emerge. With that task accomplished, our tutors became enthusiastic about tutoring.

The second step was to administer the *Hemispheric Preference Scale* which can be scored in a matter of minutes. Those tutors who scored high as either left or right processors were identified and we compared how the extremes of each group studied and did homework. Although my goal had been to match tutors and tutees, I realized that I had many more of one type than the other. Therefore, I provided each tutor with as much information as possible concerning how his/her opposites concentrated and remembered.

...the tutors were taught how to identify individual learning styles and each role played in dyads how to help others study and concentrate through styles different from their own.

Third, the tutors were taught how to identify individual learning styles and each role played in dyads how to help others study and concentrate through styles different from their own. Each then taught a mini-study skill lesson in a subject most frequently failed by underachievers.

When students came to our guidance office for assistance their learning styles were identified and the data recorded on a "Request For Tutor" card.

The final step, and perhaps the most crucial, was to design a system which matched as many tutors' and tutees' learning styles as possible. This was done with a code to identify specific styles and record them on "Available Tutor" cards. When students came to our guidance office for assistance, their learning styles were identified and the data recorded on a "Request For Tutor" card. Then the tutee was shown the Available Tutor cards (which revealed the tutor's style) and was encouraged to choose those whose styles matched theirs as much as possible.

Ann Arundel County, Maryland

The use of student learning style information by counselors in the Ann Arundel County Public Schools in Maryland is an integral part of the implementation of the K–12 competency-based guidance program. Dr. Clarence Johnson, coordinator of guidance in the district, describes how the program helps students learn how to learn as follows:

> Counselors use learning style to assist students to adapt to class and home-learning situations. In grades five, seven and nine the *Learning Style Inventory* profiles are used in classroom activities to assist students in studying and preparing for both teacher-made and standardized tests. When programming marginal youngsters, many secondary school counselors attempt to match teachers' teaching styles. In addition, the students' learning styles provide counselors with clues concerning which counselors' techniques or strategies will enable students to acquire skills in solving personal problems and which students to place in counseling groups.

...the students' learning styles provide counselors with clues concerning which counselors' techniques or strategies will enable students to acquire skills in solving personal problems....

> Learning style information is used with parents to assist them in establishing home learning climates and rituals that best facilitate their children's achievement. This is done with parents during conferences using original materials developed as guides to understanding and using learning styles data.

Another major use of learning-styles information is with the teaching staff.

> Another major use of learning-styles information is with the teaching staff. After teachers take the *Productivity Environmental Preference Survey* (PEPS) and have it interpreted, counselors conduct two staff development activities: The first covers related research on characteristics of special populations, such as gifted, talented and at-risk students, and the

second covers numerous classroom applications. These inservice efforts are followed by counselors providing information upon request about strategies for specific students.

Gainesville, Florida

The director of P. K. Yonge Laboratory School at the University of Florida at Gainesville, Dr. John M. Jenkins, describes the Teachers-as-Advisors program as follows:

Our high school Teachers-As-Advisors program began in 1985 with the single objective of personalizing the educational process for each of the 360 students in grades 9–12.

Our high school Teachers-As-Advisors program began in 1985 with the single objective of personalizing the educational process for each of the 360 students in grades 9–12. Now, as we begin our fifth year of the project, we do so with the confidence that what began as an ideal is very much achievable in practice.

For purposes of advisement our school is divided into two clusters, the BLUE and the WHITE, each with a professional counselor and 10 teacher advisors. The teachers serve as advisors to 18 students assigned randomly by grade level. So that teacher advisors can become significant others in the lives of their advisees, they remain with their advisees through the four years of high school.

Since the focus of our advisement program is the individual student, advisors gather as much information about their advisees relevant to school success as possible.

Since the focus of our advisement program is the individual student, advisors gather as much information about their advisees relevant to school success as possible. Three general headings guide that search: (1) background information and interests, (2) academic learning history, and (3) current cognitive/learning style. Advisors maintain records in each of these areas. Information is used during course selection and registration, parent conferences, and each of four individual conferences held with the advisees.

The addition of data about an advisee's cognitive/learning style is a relatively new idea, but one that we believe is crucial to personalizing education. Two instruments, the Dunn, Dunn, and Price *Learning Style Inventory* and the NASSP *Learning Style Profile*, are administered to all students in grade 9 and any who enter after grade 9.

The addition of data about an advisee's cognitive/learning style is a relatively new idea, but one that we believe is crucial to personalizing education.

The profiles derived are then used to help students identify their strengths and improve their school work. A homework disc, available through the *Learning Styles Network*, is used with the *LSI* to help students learn how to do their homework in conjunction with their diagnosed learning style.

The profiles from each instrument also assist advisors in helping teachers adjust their instruction to individual student strengths and to schedule students into the *Cognitive Skills Lab*, a center designed to strengthen students' cognitive skills. The skills taught in the lab are correlated with the cognitive skills assessed by the *Learning Style Profile*.

Our advisement program strives to place students in contact with persons, information, and activities which enhance their present school status and their future success. By providing students with a caring adult professional and mechanisms for discovering their strengths and strengthening their weaknesses, we are providing a model for other high schools whose professional staffs take seriously the ideal that all students can succeed.

...we are providing a model for other high schools whose professional staffs take seriously the ideal that all students can succeed.

The success of our advisement program is evidenced by six key indicators: (1) a reduction in schedule change requests, (2) an increase in grade point averages, (3) a reduction in the number of failing grades, (4) an increase in

scholarship dollars earned by students, (5) fewer referrals to the dean of students for disciplinary reasons, and (6) a general satisfaction about the school expressed by the students and parents.

In addition to the programs described here, Chapter 3 will outline group counseling programs using learning styles at various levels.

Chapter 3

Consulting With Classroom Teachers and Parents Regarding Learning Styles

Increasing emphasis is being placed on the role of the school counselor as a consultant to teachers, administrators, and parents. The importance of this role has been highlighted by a section on the counselor's consulting role in the Ethical Standards of the American Association for Counseling and Development.

School counselors need to become skilled in consultation models and techniques for a variety of reasons. The counselor is perceived by educational professionals as (1) particularly knowledgeable in learning theory, and (2) one who understands the learning process, how it can be enhanced within the classroom, and how learning and achievement impact student attitudes toward self and toward school in general. The counselor is committed to humanizing educational systems, enhancing the school climate, and providing for individual differences to develop the potential and uniqueness of each child or adolescent. Counselors realize that these educational goals are achieved through a team effort, with the school, home, and community working together. Administrators and curriculum specialists look to counselors because they are knowledgeable concerning students' and parents' complaints about classes, teaching methods, course requirements, and grades. The

The counselor is committed to humanizing educational systems, enhancing the school climate, and providing for individual differences to develop the potential and uniqueness of each child or adolescent.

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experienced counselor is able to identify patterns in these complaints, e.g., teaching methods that are rigid, monotonous or unchallenging; or teaching styles that accommodate a limited number of learning styles, such as using lecture and discussion exclusively. Inexperienced teachers, in particular, discuss students' behavior and achievement profiles with counselors in an attempt to better understand students' needs and strengths in order to facilitate learning.

Explaining Individual Learning Styles

There is ample evidence that we tend to be aware of our own learning style preferences and generalize these preferences to others.

There is ample evidence that we tend to be aware of our own learning style preferences and generalize these preferences to others. Teachers who are auditorily strong use auditory methods predominantly in the classroom; those who are analytic and use inductive reasoning in their approach to problem solving employ these strategies with students; teachers who equate quiet with learning impose those restrictions in the classroom and so on. If teachers move to the next step of recognizing different styles of learning in their students, it is frequently frustrating to develop ways to accommodate those differences. As Henry Higgins exclaimed in *My Fair Lady*, "Why can't everyone, be like *me*!"

An effective method of helping educators to recognize the range of individual differences is to administer the *Productivity Environmental Preference Scale* (the adult learning style instrument) to the entire staff and faculty within a school or school district. When the scale is interpreted in a large group, educators recognize the vast range of individual preferences within the group and come to the realization that these differences need to be accommodated.

The next step is to encourage teachers to assess their students.

The next step is to encourage teachers to assess their students. For very young children in kindergarten, first, or second grade the *Primary Version of*

the Learning Style Inventory by Perrin (1981) should be used, and in grades 3–12 the *Learning Style Inventory* (Dunn, Dunn, & Price, 1985). Students should understand before the administration of these instruments that there are no "right" or "wrong" answers, and that individual responses will vary according to individual requirements. After the scale has been scored, use Tables 1 and 2 to interpret the findings. Each teacher should then develop group profiles for each of the learning style elements listing students whose preferences and rejections are above standard scores of 60 or below 40.

Accommodating Learning Style Preferences Within the Classroom

Classrooms and curriculum strategies need to be redesigned to accommodate the variety of learning style preferences evidenced among a group of 25–35 individuals. Changes that are designed to accommodate environmental, emotional, sociological, physical, and psychological needs are discussed in this section.

Classrooms and curriculum strategies need to be redesigned to accommodate the variety of learning style preferences....

Environmental

The classroom can be redesigned to include a variety of study areas, including conventional seating for those needing formal design, and informal carpeted areas with easy chairs and/or large pillows. Rules of conduct need to be reviewed with students so that the informal area is not synonymous with "fun and games." Students who require sound should be encouraged to pursue solitary learning activities while listening to symphonic music using earphones. Others who need quiet should be located away from group interaction with room dividers or bookcases used to define areas. During periods of group work, students who prefer to work independently and

The classroom can be redesigned to include a variety of study areas, including conventional seating for those needing formal design, and informal carpeted areas with easy chairs and/or large pillows.

quietly should be encouraged to use earplugs to enhance concentration. Light requirements can be accommodated by placing students by windows or in areas of the room where the lighting has been modified with dim lights. Temperature needs are probably best accommodated by suitable clothing; students who prefer a cool environment should dress in light clothing and sit near windows, while those who prefer a warm environment should keep a sweater at school and sit near radiators.

Emotional

...students who are highly motivated and persistent can use Contract Activity Packages (CAPs) to accommodate their learning styles.

Both instructional approaches and assignments should be varied in order to accommodate alternative learning routes. For example, students who are highly motivated and persistent can use *Contract Activity Packages* (CAPs) to accommodate their learning styles. The basic elements of CAPs include: (1) simply stated objectives that itemize exactly what the student is required to learn; (2) multisensory resources that teach the information which the objectives indicate must be mastered; (3) a series of activities through which the information that has been mastered is used in a creative way; (4) a series of alternative ways in which creative activities developed by one student may be shared with one or more classmates; (5) at least three small group techniques; and (6) a pretest, a self-test, and a post-test (Dunn & Dunn, 1978). The *Learning Style Network*, co-sponsored by St. John's University and the National Association of Secondary School Principals, has developed a broad range of CAPs which are suitable for a variety of content areas across all grades. Creative teachers can develop their own set of CAPs over time. CAPs can be designed to accommodate a broad range of emotional preferences. For example, reading the CAP onto a cassette can be used with students who lack motivation, reading ability, and persistence. Students with a high

Creative teachers can develop their own set of CAPs over time. CAPs can be designed to accommodate a broad range of emotional preferences.

need for structure will respond better if learning tasks and assignments are concrete, carefully delineated, and unambiguous in their guidelines. Those who prefer low structure should be encouraged to pursue learning objectives in a variety of ways and submit assignments that result from creative, divergent, and open-ended approaches.

Sociological

Students should be assigned to do instructional tasks by themselves, in pairs, in small groups, with the teacher, or in varied patterns, according to how they learn best. Frequently, teachers assume that individuals learn best when presented consistently with whole-group instruction. Observation of any group of students during teacher lectures or demonstrations will reveal that some are attentive, others are doodling and seemingly listening with the third ear, and still others are tuned-out completely and engaged in some ancillary activity. Again, the *Contract Activity Packages* provide for a broad range of sociological preferences in the pursuit of learning objectives, with some designed for individual mastery, others for group activities, and yet others for teacher input and monitoring.

...the Contract Activity Packages provide for a broad range of sociological preferences in the pursuit of learning objectives, with some designed for individual mastery, others for group activities, and yet others for teacher input and monitoring.

Physical

An effective way to accommodate a variety of perceptual strengths is through the use of multisensory instructional packages, which are self-contained teaching units with the following basic elements in common: (1) each package focuses on a single concept; (2) at least four senses are used to learn the contents; (3) feedback and evaluation are built in; and (4) learning is private and aimed at individual learning styles (Dunn & Dunn, 1978). Intake needs can be met by permitting students to snack on nutritional foods such as raw fruits or vegetables while

working. At the secondary school level students can be scheduled so that their most difficult subjects are taught during the time-of-day peaks. Lastly, mobility needs can be accommodated through redesigning the classroom into a variety of study areas which lend themselves to selective movement.

Psychological

Individuals with a right hemisphere cognitive style tend to express their thoughts internally in pictorial form, prefer global approaches, and use deductive reasoning.

Individuals with a right hemisphere cognitive style tend to express their thoughts internally in pictorial form, prefer global approaches, and use deductive reasoning. Those students with a left hemisphere cognitive style tend to express their internal thoughts abstractly, prefer analytic approaches, and use inductive reasoning (Zenhausern, 1982). Research indicates that cognitive "tempo" is related to hemisphericity; rights tend to be impulsive while lefts tend to be reflective. These findings have important implications in the classroom. It can be expected that the student who is right-dominant will prefer less structure and will be more impulsive, more likely to "act out," and more likely to be extroverted. Left-dominant individuals are frequently perceived as "ideal students," motivated, controlled, and verbally oriented. Teachers can accommodate the two cognitive styles by using both visual and auditory strategies and both deductive and inductive approaches in teaching the same concepts.

Left-dominant individuals are frequently perceived as "ideal students," motivated, controlled, and verbally oriented.

When teachers begin to implement learning style concepts within the classroom counselors can lend support by offering to observe students in the classroom setting, counsel students regarding their perceptions of changes in the learning process, identify additional resources that can aid in implementing and evaluating the learning style approach, and incorporate this approach in their own work with students individually and in groups.

An important resource for implementing learning-styles based instruction is a text entitled, *Learning*

Styles: Quiet Revolution in American Secondary Schools (Dunn & Griggs, 1988). The book describes 10 high schools in rural, urban, and suburban regions across the United States that were visited by the authors and identified as model schools that utilize learning style instructional approaches to improve student achievement and build positive attitudes. Additionally, two textbooks are available that provide detailed, descriptive accounts for teaching elementary students and secondary students through their learning style strengths (Dunn & Dunn, in press a; Dunn & Dunn, in press b).

Arranging for Varied Sociological Pattern (K–12)

Frequently counselors operate under the assumption that all students are good candidates for individual counseling or group counseling or peer counseling. However, when students are asked to identify their preferences in these areas they sometimes reject one or more of these modalities and strongly embrace other modalities. Thus it seems feasible to recognize these differences and provide for them within the classroom and within the counseling program.

Accommodating students with strong preferences for working and learning alone or independently should involve the use of counseling techniques that promote personal responsibility and independent action. Selected behavioral counseling techniques that are appropriate for these students include "homework" assignments, programmed materials for bibliocounseling, self-monitoring, self-reinforcement, and thought stopping.

Accommodating students with strong preferences for working and learning alone or independently should involve the use of counseling techniques that promote personal responsibility and independent action.

Students who are strongly adult-oriented can be exposed to a variety of individual counseling approaches which should be selected on the basis of other learning style element preferences as well.

Such approaches might be cognitive counseling, gestalt therapy, and so forth.

A variety of counseling strategies accommodate students who are both adult- and peer-oriented. Examples of these strategies—appropriate for preschool, elementary, and secondary school youth—are developmental play, magic circle, and family sculpture, which are described next.

Developmental Play (K–1)

Play is an integral part of a young child's development and is inextricably related to social, physical, and intellectual development....

Play is an integral part of a young child's development and is inextricably related to social, physical, and intellectual development (Bagley, 1975). Developmental play enhances developmental and expressive communication through intense interaction between the child and significant adults. The focus is on helping the child establish a meaningful relationship with an adult partner. Used predominantly with four, five, and six year olds, developmental play involves six to eight children with individual adult partners and one group leader. The children meet weekly for approximately 15 weeks with the adults. The sessions last for 75 minutes and are organized into three parts: (1) *One-to-one child/adult play,* in which body-contact games are played. An example is the *roll-me-out* game in which the adult pretends that the child's body is a piece of dough which is rolled, shaped, and molded into workable, moving parts. The game is an excuse for touching, and for many children, who have perhaps associated adult physical contact with fear, the positive closeness with an adult builds trust (30 minutes). (2) *Circle time,* with the entire group, in which the group leader helps the adults and children talk about their feelings and behaviors through structured activities including getting-acquainted, warm-up activities, motor or body awareness activities, and guided fantasy activities (30 minutes). (3) *Juice time,* for closure. (15

minutes) (Burt & Myrick, 1980). The learning style elements that are compatible with the developmental play approach are as follows:

Perceptual strengths: High kinesthetic and tactile needs
Sociological elements: High need for adult and peer involvement
Emotional elements: Moderate need for structure

Magic Circle (K–6)

The Magic Circle is a classroom technique in which pupils and their teacher, frequently in consultation with the school counselor, create an accepting climate for sharing their thoughts and feelings, developing confidence, and learning to interact with each other effectively. The teacher and students form a circle and the teacher leads the entire class in a nonjudgmental discussion about what is important and meaningful to them. The discussions are generally centered around the following: (1) social problem-solving, which deals with students' social behavior in school; (2) open-ended, which focuses on intellectually important topics; and (3) educational-diagnostic, which centers on how well the students understand the concepts of the curriculum. Such meetings should occur every day in kindergarten and the elementary school. A major goal is to demonstrate to children that the classroom can be a working, problem-solving unit and that each child has both individual and group responsibilities in the school (Hansen, Warner, & Smith, 1980). In *Schools Without Failure* (1969), Glasser gives detailed descriptions of how to conduct classroom meetings, covering such topics as the circle arrangement, length of sessions, and methods of stimulating discussion. The learning style elements that are compatible with the Magic Circle approach are as follows:

The Magic Circle is a classroom technique in which pupils and their teacher, frequently in consultation with the school counselor, create an accepting climate for sharing their thoughts and feelings, developing confidence, and learning to interact with each other effectively.

Environmental elements: Informal, casual, relaxed design
Perceptual elements: Auditory approach predominantly
Psychological elements: Global and analytic approaches are accommodated
Sociological elements: Varied use of adult and peer approaches

Family Sculpture (7–12)

Dr. David Mendelowitz, formerly a counselor at Sleepy Hollow High School in Tarrytown, New York, describes a strategy used in his *Concerned Persons Group* to assist adolescents who live in families in which one or both parents are chemically dependent.

One technique which has proven to be most useful in helping group members learn about their family structure and inter-dynamics is the Family Sculpture.

One technique which has proven to be most useful in helping group members learn about their family structure and inter-dynamics is the Family Sculpture. This technique provides the individual and the group with a means of visually depicting relationships within the family. A group member volunteers to "sculpt" his/her family by placing other group members (who in this exercise represent family members) in relation to each other in such a way as to create the volunteer's perception of how the family is organized. The volunteer manipulates the bodies, expressions, and distances between "family members" until satisfied that the finished sculpture does in fact represent the family.

The volunteer generally feels a sense of relief for having described (via the sculpture) some important issues concerning the family's dynamics....

Once completed, group members and the volunteer are encouraged to discuss their reactions to the exercise. Generally the group members who played a family member are asked how it felt, for instance, to be the alcoholic father, from whom other family members distanced themselves; or the enabling mother, who is in a "push/pull" conflict between her alcoholic husband and angry children. The volunteer generally feels a sense of relief for having described (via the sculpture) some important issues concerning

the family's dynamics and is able to gain important insights from group members about the individual roles and functions within the family. The learning style approaches that are compatible with the Family Sculpture technique include the following:

Sociological elements: Varied use of peer and adult approaches

Perceptual elements: Accommodates a variety of perceptual strengths, including auditory, visual, and kinesthetic

Accommodating a Variety of Perceptual Strengths (K–12)

As indicated earlier, a study of longitudinal data on learning styles reveals that perceptual strengths are related to development. Tactual and kinesthetic modalities develop first and are the primary strengths of most pre-school and early elementary school youth, followed by the visual modality which often becomes prominent during the fifth grade, and lastly the auditory modality, which is significantly stronger by the seventh grade.

...a study of longitudinal data on learning styles reveals that perceptual strengths are related to development.

However, counseling techniques and strategies tend to be predominantly "talking" or auditory approaches. Therefore, the challenge for school counselors, particularly elementary school counselors, is to develop counseling strategies that accommodate a variety of perceptual strengths. Examples of multisensory counseling techniques to be described include creative arts therapy, DUSO, charades, communication skills development, and career education exploration.

...the challenge for school counselors, particularly elementary school counselors, is to develop counseling strategies that accommodate a variety of perceptual strengths.

Creative Arts Therapy (K–3)

Creative Arts Therapy is a technique to help young children express themselves cognitively and affectively through creative materials (Nystul, 1978). The

technique involves the following four stages: (1) *Setting the Stage,* in which young children are encouraged to express themselves through a variety of play materials, including molding clay, paints, puppets, Bozo punching clowns; (2) *Setting an Example,* in which the reluctant child who resists participation in the creative expression lesson is encouraged by the adult through social modeling; (3) *Setting Yourself at Ease,* in which the adult accepts without evaluation the creative expression of the child; and (4) *Obtaining an Understanding of the Child,* in which the adult comes to see the child from the child's perspective by understanding feelings of joy, frustration, rivalry, etc., as worked out through interaction with creative materials. Compatible learning style elements are global processing, right-hemispheric dominant, and tactual-kinesthetic modalities.

Developing an Understanding of Self and Others (DUSO) (K–8)

Developing an Understanding of Self and Others (DUSO) (K–8) is a kit for use in pre-school through junior high/middle school, that is designed to help and encourage youth to become aware of the relationship between themselves and others and their needs and goals.

Developing an Understanding of Self and Others (DUSO) (K–8) is a kit for use in pre-school through junior high/middle school, that is designed to help and encourage youth to become aware of the relationship between themselves and others and their needs and goals. Eight unit themes create the program's organizational framework: "Understanding and Accepting Self," "Understanding Feelings," "Understanding Others," "Understanding Independence," "Understanding Goals and Purposeful Behavior," "Understanding Mastery, Competence, and Resourcefulness," "Understanding Emotional Maturity," and "Understanding Choices and Consequences." The kit includes: (1) a manual for teachers or counselors with concise, step-by-step instructions for each activity (each DUSO cycle includes a story, a problem situation, a role-playing activity, and a puppet activity—a cycle typically takes one week to

complete); (2) **story books** containing 41 theme-centered stories, illustrated in full color; **audio-cassettes** or **phonograph records** presenting animated narratives of the stories, together with theme songs and activity songs; (3) **puppets,** including animal and people hand puppets that bring daily episodes and problems to life; and (4) **visual materials,** including display posters, roleplaying cards, and group discussion cards to illustrate the main points of the DUSO stories (Dinkmeyer, 1970). This program is designed to accommodate a variety of perceptual strengths, sociological groupings, and emotional stimuli.

DUSO...is designed to accommodate a variety of perceptual strengths, sociological groupings, and emotional stimuli.

Charades (7–12)

Eileen Connolly, a counselor at Baldwin High School in Baldwin, New York, describes a group counseling approach with high school freshmen termed "charades."

Toward the end of the school year the counselor asks six freshmen to participate in an exercise of "charades." They are instructed to do the following:

> For our next session, prepare non-verbal skits or body movements, which would illustrate feelings, emotions, events or reactions that were demonstrated within the group during this past year. Remember to think about the topics that were discussed, and what occurred as a result. Was anyone ever hurt by what was said during group? Did anyone get angry? Did everyone listen at all times? Think about these questions during the week and then present the skits/body movements during group next week.

The following week the six team members present their skits. After each skit is portrayed the remaining 13 members of the group attempt to identify the emotion, reaction or event that was

illustrated. After each skit is properly identified, the group members are asked to do the following on paper: (1) identify the emotion that you feel was being conveyed (anger, frustration, excitement, hurt); (2) identify the reaction of the other group members to that emotion; (3) write down how you feel the situation could have been resolved more effectively.

After all of the skits are completed, and group members are given ample time to record their responses, the counselor asks: (1) How difficult was it to identify the event or emotion portrayed? (2) Was the group responsive to the emotion at the time? Did they ignore the emotion? (3) How do you think the situation could have been best handled? (4) Were the group members usually attentive when someone else spoke? Did anyone feel misinterpreted?

...group members formulate what they think is a major obstacle to their effective communication, such as poor listening or low auditory skills.

After the discussion on each of the skits, group members formulate what they think is a major obstacle to their effective communication, such as poor listening or low auditory skills.

Communication Skills Development (7–12)

Nancy Kessler, a counselor at King Philips Middle School in West Hartford, Connecticut, describes a communication skills exercise which she used in group counseling to accommodate a variety of perceptual strengths.

With adolescents engaged in group counseling it is most important to review their personal interaction patterns....

Under the best of circumstances effective communication is a difficult process that must be continually worked at by those engaged in the relationship built around that communication. With adolescents engaged in group counseling, it is most important to review their personal interaction patterns, examine the existing faulty communication systems they have developed, and discuss those influences which lead to misinterpretations, misunderstandings and eventually, the breakdown of the relationship.

This particular strategy draws heavily on Virginia Satir's work in identifying four types of communicating that have a severe negative influence on relationships and self-esteem. Satir, Stachowiak, and Taschman (1975) call them placating, blaming, super reasonable, and irrelevant. In the initial stages of group counseling, members become aware of these types and have targeted such behaviors as generalizing statements, absolute truth statements, displacement defenses, mindreading games, double messages, and getting-the-real-message.

During a mid-session, members are asked to draw on their own experiences with faulty communication and volunteer to roleplay these with other volunteer members. Approximately three situations are roleplayed. After each vignette members take their personal log and form a written interpretation of what occurred. This can be done as succinctly as possible for each member (e.g., brief notes, key phrases, paragraph form, drawing, etc.). Discussion follows based around the following questions: (1) Who could identify and in what ways with which particular vignette? (2) What were some of the influences that severely lessened the quality of communication taking place? (3) Who gave whom "license" not to listen? (4) What were some of the non-verbals that were screaming loud messages? (5) Who was a blamer, a placater, super reasonable, irrelevant?

...members are asked to draw on their own experiences with faulty communication and volunteer to roleplay these with other volunteer members.

The counselor then directs the group to sit quietly for a few minutes, and take one scenario and imagine it as taking place with optimum communicating conditions.

- Would anyone or a few like to roleplay this for the group?
- How would the dialogue differ?
- How would non-verbals differ?
- What is making effective communication far more difficult for us? Why is ineffective communication so much easier?

The counselor then directs the group to...take one scenario and imagine it as taking place with optimum communicating conditions.

- In what ways do you see the quality of your personal communication pattern affecting your feelings of self-worth? What are the dangers here?

A homework assignment follows: Choose one communication interaction that you experience this week and consciously work at improving the quality of the communication. Be prepared to log this before the next session and share it with the group.

Sample adolescent scenarios include the following:

1. Patty's boyfriend Danny has forgotten her birthday. When he picks her up from school that afternoon, she is noticeably cold and angry. When Danny approaches with the question, "Is something wrong, Patty?" she vehemently responds through clenched teeth and raised fist, "No! What makes you think something's wrong?!"
2. Danny has just experienced the worst day of his teenage existence. Patty has broken up with him. He was late for school that morning and had to serve detention. The biology test he was sure he "aced" came back marked 43%. He finally arrives home after missing the bus and is greeted by his mother with, "Hi, Danny. Where have you been?" Danny replies, "Get off my case, Mom. You're always on my back about where I've been and who I'm doing what with. Leave me alone!" Danny is informed that he is grounded for the better part of his life for talking like this to his mother.

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Career Education Exploration (9–12)

During the exploratory phase of group counseling, the counselor asks a group of 8–12 high school

seniors to participate in an imagery exercise. Counselees are instructed as follows:

> Imagine a time in the future—ten years from today. You are approximately 21 years of age. Picture yourself at that age right now. What are you doing? Are you with someone? What does it feel like in your surroundings? What are you thinking about? Spend a few minutes in silence imagining what your life is like.

After the exercise the following activities are presented to process the imagery exercise:

1. After paper is distributed to each group member, the counselor says: Draw a picture of your fantasy, including as many people, things, and events as possible. Your picture might be a series of small drawings, not necessarily connected.
2. Next, on the back of your paper write down a description of what you imagined. It is important to get down your feelings and thoughts, rather than focusing on writing style and form. You might choose to write down key words such as "happy," "son and daughter," "famous writer," or "sunshine."
3. Now, let's roleplay several of your fantasies. Would one of you volunteer to share your pictures and writings with the group? (The counselor identifies a counselee whose imagery includes other people and assigns roles to various group members to act out the scene whether in the home, workplace, or whatever.)

...write down a description of what you imagined. It is important to get down your feelings and thoughts, rather than focusing on writing style and form.

The counselor directs discussion in order to involve counselees in processing their fantasies by asking:

1. Which of the three activities (drawing, writing, roleplaying) did you find easiest? Most difficult? (Visually oriented persons find the

drawing preferable; auditory and tactual persons prefer the writing; while kinesthetically oriented clients prefer the roleplaying. Visual persons generally find the imagery exercise interesting and "easy to get into.")

2. In your fantasy were you alone or with family and friends? If you pictured yourself married did you have difficulty imagining what your spouse was like?
3. In your mental picture were you at work? at home? recreating? contemplating?
4. Where were you in your mind's eye? Did you seem to be in a rural or urban area? Was the climate warm or cold? Was it noisy or quiet? (Responses relate to student's environmental preferences.)

A skilled counselor can use this exercise to clarify the values of group members and identify their aspirations which relate to the area of career decision-making.

Developing Effective Study Skills to Accommodate Learning Style (K–12)

Study skills are primarily information-processing procedures that facilitate learning retention and application of knowledge and skills (Fitzpatrick, 1982). Study skills are learned abilities for acquiring and applying knowledge and skills; study skills involve learning how to learn. The major objective of a study skills program is to make students truly independent learners.

...study skills involve learning how to learn. The major objective of a study skills program is to make students truly independent learners.

Students are expected to apply study skills in a wide variety of learning tasks. For example, Sally Brown, a seventh grade student, had the following assignments:

General Science: *Read pages 50–80 in the textbook and prepare for an objective test on the content.*

Social Studies: *Outline Chapter Three in the text and submit the notes from class lectures on "The Causes of Nuclear Proliferation."*

French: *Learn the meaning of 50 French words and ten idioms and develop sentences in French using the words and idioms.*

English: *Prepare a paper on "What It's Like to Be a (area of career interest)" based on readings, interviews with persons in the career, and observations of the work setting of persons engaged in the career.*

Mathematics: *Complete ten story problems, testing deductive reasoning and basic computational skills, and prepare for a quiz on converting fractions to percentages.*

Sally's assignments involved the application of these eight basic study skills: (1) reading, (2) vocabulary, (3) test taking, (4) writing, (5) thinking ability, (6) listening, (7) note taking, and (8) time management skills.

Since most secondary schools are departmentalized there is usually an emphasis upon content areas and careful delineation as to **what** is taught at each grade level and within each subject matter area. However, frequently the **process** of teaching and learning is not specified, e.g., (1) **how** the content is taught (lecture, independent study, individualization, small group techniques, etc.), and (2) **how** students study with attention to the development of study skills that can be applied across content and/or discipline areas. This condition suggests that there needs to be a comprehensive approach to developing study skills at all educational levels. For example, English teachers incorporate into the curriculum the instruction in the development of writing skills; general science teachers focus on the development of vocabulary and reading skills; school counselors plan group activities to enhance listening skills, and so forth across the curriculum. With self-contained

...there needs to be a comprehensive approach to developing study skills at all educational levels.

classrooms at the elementary school level teachers and counselors can provide for study skills development more readily. The fundamental instructional content within these skill areas and implications for learning style accommodations are outlined below.

Reading (K–12)

Underlining, outlining, highlighting, and summarizing are all methods of focusing attention and increasing understanding of written material.

Underlining, outlining, highlighting, and summarizing are all methods of focusing attention and increasing understanding of written material. The SQ3R method enhances the processing of information and involves five steps: (1) **Survey**—glance at chapter headings, read titles and subtitles, determine organizational patterns, read summaries; (2) **Question**—formulate initial questions about each section to focus further reading; (3) **Read**—actively search for answers to the questions formulated previously; (4) **Recite**—answer questions independently, without reference to the text; and (5) **Review**—list major facts, ideas, and concepts under each heading. Additional guidelines that help students acquire proficiency in reading are as follows:

- Identify the learning style elements that enhance concentration, i.e., presence or absence of noise; strong versus dim lightening; time of day preferences; temperature requirements; sociological preferences; and design requirements.
- Underline important facts, ideas, or themes.
- Take notes on the reading material, using symbols, acronyms, diagrams, and outlines (accommodates tactile and visual modalities).
- Engage in speed reading to survey the overall content (right brain dominant congruent).
- Learn to read critically, separating knowledge from opinion, identifying the author's perspective, and determining extent of agreement/disagreement.

Learn to read critically, separating knowledge from opinion, identifying the author's perspective, and determining extent of agreement/ disagreement.

Carbo (1983) found that differences in reading styles exist among primary, intermediate, and junior high school students and strongly suggests that alternative approaches must be available to youth at every level. In his studies of cerebral dominance, Zenhausern (1982) found that a sample of good readers was equally divided between right and left brain dominance, but that 85% of poor readers were right brain dominant, which suggests that whole word recognition skills, as opposed to phonetic skills, need to be developed in this population.

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Vocabulary (K–12)

In Samuel Johnson's 1755 *Dictionary,* there were approximately 15,000 words. Today, *Webster's Collegiate Dictionary* contains approximately 500,000 words. Students need to be exposed to a variety of methods which are designed to increase their working vocabulary:

- When reading, supplement your reading with dictionary work.
- Keep a list of new words in each content area.
- Learn words from their context through inference or contrast.
- Learn words from prefixes and roots. It is estimated that 60% of the English language is comprised partially or totally of prefixes and roots derived from Latin and Greek.
- Use new vocabulary words, first in writing, and then in speaking. It is through consistent usage that the new word will eventually become part of your established vocabulary.

Test Taking (7–12)

Throughout the educational process, students are tested on what they have learned or are challenged to apply basic principles of learning in solving new

problems. Some of the skills that enhance the mastery of tests are as follows:

- Preparing for the test by planning for enough study time and adequate rest and food; by blocking out distractions to enhance concentration; and by studying during the time of day when you have optimal energy.
- Developing skills in taking objective and subjective examinations. For example, in multiple choice type questions, make sure you understand the stem statement, then look for patterns or analogies, and eliminate questionable responses. In subjective examinations, develop a comprehensive outline, allow enough time for the writing process, and write paragraphs that are coherent and smooth, using examples or illustrations to support major concepts.
- Developing test sophistication in following directions, scanning, pacing, and reviewing questionable responses.
- Learning from examinations by analyzing the incorrect items and determining reasons for errors as well as classifying errors as to type.
- Managing test anxiety, including replacing negative self-statements with positive ones, building confidence by planning for success, and using relaxation techniques.

Writing (7–12)

The quality of the idea and the skill with which it is communicated make for excellence in writing.

Writing assignments at this level can vary from creative writing, theme writing and book report writing, to elementary research writing. Some general writing principles are summarized as follows:

- The quality of the idea and the skill with which it is communicated make for excellence in writing.

- The process of writing themes, essays, term papers and reports involves: (1) selecting a topic; (2) deciding on the audience; (3) determining the purpose for writing, i.e., informational, persuasive, entertaining; (4) developing questions; (5) researching the topic; (6) developing an outline; (7) keying research notes to the outline; (8) beginning writing; (9) setting aside the paper and evaluating later; (10) rewriting.
- Collect information efficiently, consulting computer searches, major indexes, journals and books, microfilm, etc.
- Use primary sources (rather than secondary sources) whenever possible.

Use primary sources (rather than secondary sources) whenever possible.

Thinking Ability (7–12)

Thinking is the process of making the best use of our experiences, facts, and information. Thinking is generally inductive (moving from specific facts or data to forming conclusions and generalizations) or deductive (moving from general premises on the whole to inferring the specifics or parts). Aids to thinking include the following:

Aids to thinking include...realizing the importance of suspending judgment until the problem or construct has been investigated.

- Developing curiosity about the nature of people, things, and the environment-at-large.
- Realizing the importance of suspending judgment until the problem or construct has been investigated.
- Employing problem-solving skills: (1) identifying the problem; (2) analyzing the components of the problem; (3) generating solutions to the problem or identifying alternatives; (4) weighing the pros and cons of each alternative; (5) deciding on a course of action or solution; (6) implementing the decision; and (7) evaluating the decision (utilized

predominantly by left brain dominant individuals).

Listening (K–12)

Blocks to effective listening include an inability to concentrate, focusing on your own response rather than being attentive to the speaker, and distractions such as noise. Becoming an active listener involves:

- Attention to non-verbal cues (body language, facial expressions, changes in tone of voice, etc.) to determine the emotional as well as the cognitive content of the message.
- Developing techniques of active listening: (1) clarifying what the speaker has said by rephrasing the message; (2) analyzing the content of the message to assess the major themes; (3) raising questions as you listen to explore deeper levels of the issue or topic; (4) and summarizing the content of the message by using your own words to express the message.

Counselors can help students develop listening skills in small groups...by having a second speaker first summarize what the previous speaker has said before expounding a new idea....

Counselors can help students develop listening skills in small groups, for example, by having a second speaker first summarize what the previous speaker has said before expounding on a new idea or message.

Notetaking (9–12)

The use of cassette tape recorders is a helpful technique for use with lecture-discussion content that is technical. Used in conjunction with notetaking, tape recording is an effective learning device, particularly for students who are auditory in terms of perceptual strength. The Cornell Study Center identifies the 5 R's—five basic processes of effective notetaking:

- **Record** the main ideas or themes
- **Reduce** the material by summarizing and noting key terms
- **Recite** the key ideas to oneself
- **Reflect** and think about the content
- **Review** the material through recall

It is helpful for students who are tactually oriented to reorganize and recopy notes after class.

Time Management (K–12)

Using time efficiently is frequently a difficult task. Procedures that are helpful to managing time effectively include the following:

- Record keeping procedures should be developed through daily schedules or diaries to identify habits such as amount of time spent in leisure, study, activities of daily living, etc.
- Schedules should be developed based on identified habits and incorporating time for study, work, and chores.
- Study time should be blocked out to allow time for each course.
- Realistic goals should be developed for each study session.
- Study breaks should include rewards for time-on-task efficiency.
- Time-of-day preferences should be assessed and optimal time given to the more difficult tasks or subjects.
- Study activities over a lengthy period of time should be rotated among reading, outlining, notetaking, creative writing, etc.
- Use "odds and ends" of time (waiting in line, riding the school bus) effectively by using review cards, vocabulary lists, etc.

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Use "odds and ends" of time (waiting in line, riding the school bus) effectively by using review cards, vocabulary lists, etc.

In addition to helping students develop effective study skills by addressing this need across

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discipline/content areas, it is beneficial to assess each student's individual learning style preferences so that the student, teachers, counselors, and parents can accommodate these individual preferences. An analysis of individual learning style preferences will help define the ***how*** of students' study skills development. Individual learning style preferences need to be assessed in such areas as the following:

- Does the student learn better alone, with peers, or with adults present?
- Is learning enhanced by studying at the same place regularly or does the student require mobility and informal design for optimal learning?
- Is content mastered best through auditory, visual, tactual, or kinesthetic modalities or some combination of these modalities?
- Does the student function best with a high degree of structure and specificity of task or is an open-ended, global assignment more likely to utilize the student's unique, creative abilities?
- Is the presence or absence of sound required?
- Does concentration improve with intake—snacking, drinking?
- Does the student prefer dim or bright lights?
- Is learning enhanced in a cool versus warm environment?

Study Skills for College-Bound Students

There is evidence that many students arrive on college campuses with deficient study skills.

There is evidence that many students arrive on college campuses with deficient study skills. A report of the National Commission on Excellence in Education (1983) concluded that in most schools the teaching of study skills is haphazard, unplanned, and inadequate.

Research indicates that providing study skills workshops on the college campus can result in positive outcomes. Malett, Kirschenbaum, and Humphrey (1983) conducted a study improvement program with

63 college freshmen. They found that the program significantly improved students' work habits and time spent in studying. In addition grade-point averages increased significantly when measured during the sophomore year.

Similarly, Clark-Thayer (1987) found that college students were not aware of the many options available to them for studying based on their learning styles. Rather those young students had become deadlocked by inappropriate locations, times, and techniques often because those had been imposed on them by well-intentioned adults during the early school years. The provision of college tutors, who were knowledgeable about learning styles, helped the students increase their ability to perform academically. Clark-Thayer also reported that the information concerning their learning styles frequently aided those young adults to better understand themselves by identifying techniques for mastering difficult information and capitalizing on their personal strengths and attributes.

...college students were not aware of the many options available to them for studying based on their learning styles.

More recently, Cook (1989) examined whether learning style awareness alone, without a change in the way instruction occurred, would result in increased academic achievement. Students in the learning styles awareness group were provided with knowledge of their style profiles and suggestions for complementary study environments during counseling sessions at the college. Analysis revealed that students achieved significantly higher grades after they became aware of their individual learning styles. Knapp (1991) found that developing an awareness of learning styles resulted in an improved retention rate during the freshman year. Furthermore, she found that both probationary and non-probationary freshmen students, who were taught how to study in a manner congruent with their learning style preferences, evidenced higher academic achievement than those who were either informed of their learning style preferences only or those in the control group.

...students achieved significantly higher grades after they became aware of their individual learning styles.

Summary

Counselors can assume a major role in responding to the remedial and developmental needs of youth in planning, implementing, and evaluating study skills programs.

Schools and colleges must provide students with the tools and skills necessary for success in the educational arena. Boyer (1987) asserted that more attention must be focused on how students learn. Counselors can assume a major role in responding to the remedial and developmental needs of youth in planning, implementing, and evaluating study skills programs. Students should be assessed to identify their learning style preferences and results should be interpreted so that they can be applied to the instructional process. The outcome of counseling students toward effective study skills based on their learning style strengths is empowering students to direct and monitor their own learning.

Chapter 4

Research on Learning Styles

Educators must be accountable. In recent years the demand for accountability has increased, and administrators, teachers, and counselors are expected to furnish evidence of accomplishments and gains in order to ensure public support. To be accountable means to be responsible—responsible for relevant databased goals, cost efficient and effective procedures, and measurable outcomes (Gibson, Mitchell, & Higgins, 1983). Accountability should begin with a review of the research in the area of teaching and learning to determine which approaches work in practice.

...administrators, teachers, and counselors are expected to furnish evidence of accomplishments and gains in order to ensure public support.

In this chapter the research on learning styles in the areas of teaching, learning, and counseling is reviewed. An additional resource for securing up-to-date research on learning styles is The Center for the Study of Learning and Teaching Styles, co-sponsored by the National Association of Secondary School Principals (NASSP) and St. John's University, New York. The Center sponsors a national network of institutions interested in learning styles, publishes a newsletter on current practices, designs inservice workshops for teachers, counselors, and administrators on learning styles, and assists graduate students and practitioners in the design of research on learning styles.

Research on Learning Styles in Teaching and Learning

The learning style model has been tested extensively in the areas of teaching and learning.

The learning style model has been tested extensively in the areas of teaching and learning. An expanding core of research listed here demonstrates the importance of accommodating individual learning style preferences within the learning process.

Elementary School Children

Carbo, 1980
Krimsky, 1982
Perrin, 1984
Pizzo, 1981
Urbschat, 1977
Virostko, 1983
Weinberg, 1983
Wheeler, 1983

Middle School Students

Cholakis, 1986
DeBello, 1985
Dunn, 1981
Giannitti, 1988
Griggs, 1982
Hodges, 1985
Martini, 1986
Trautman, 1979

High School Students

Ballinger & Ballinger, 1983
Kroon, 1985
Lynch, 1981
Tanenbaum, 1982

Urban Settings

Dunn, 1981
Hodges, 1985
Weinberg, 1983
Wheeler, 1983

Suburban Settings

DeBello, 1985
Giannitti, 1988
Griggs & Price, 1979
Martini, 1986
Price, Dunn, Dunn, & Griggs, 1981

High Risk Groups

Cholakis, 1986
Dunn & Dunn, 1974
Hodges, 1985
Lynch, 1981
Martin, 1977
Weinberg, 1983

Learning Disabled Groups

Wheeler, 1983

Bilingual Groups

Spiridakis, 1981

Culturally Different Groups

Button, 1977

Gifted Students

Cody, 1983
Dunn & Price, 1980

Griggs, 1984
Griggs & Price, 1980a, 1980b
Ricca, 1983

Findings indicate that there is significant improvement in the areas listed below when individual learning style preferences are accommodated through complementary teaching styles, instructional approaches, or resources.

Academic Achievement

Brown, 1978
Cafferty, 1980
Cholakis, 1986
DeBello, 1985
Giannitti, 1988
Hodges, 1985
Krimsky, 1982
Kroon, 1985
Martini, 1986
Pizzo, 1981
Shea, 1983

Student Attitudes

Cholakis, 1986
Domino, 1970
Giannitti, 1988
Hodges, 1985
MacMurren, 1985
Martin, 1977
Perrin, 1984
Pizzo, 1981

Student Behavior

DeBello, 1985
Dunn, 1981
Jackson, 1978

Tanenbaum, 1982
Trautman, 1979
Urbschat, 1977
Virostko, 1983
Weinberg, 1983
Wheeler, 1983

Appendix A outlines the research on teaching through individual learning styles that has resulted in increased academic achievement and improved student attitudes toward school (learning and/or improved student behavior in school). Among the 27 experimental studies outlined in Appendix A, ten studies involved students at the elementary school level, nine involved students at the middle and junior high school level, and eight involved students at the senior high school level.

Research on Learning Styles in Counseling

Experimental research studies...reveal a trend that indicates positive student outcomes if learning style preferences are accommodated.

Experimental research studies in the area of counseling have been conducted with elementary school children (Griggs, Price, Kopel, & Swaine, 1984; Miles, 1987) and college students (Clark-Thayer, 1987; Spiegel, 1986), and they reveal a trend that indicates positive student outcomes if learning style preferences are accommodated.

The purpose of the study by Griggs, Price, Kopel, and Swaine (1984) was to determine the effects of group counseling on sixth grade students who were matched and mismatched on counseling strategies related to motivation and structure. Nineteen students with either low motivation/high structure needs or high motivation/low structure needs were randomly assigned to three groups including (1) a highly structured series of eight group counseling sessions with a career education focus, (2) a minimally structured group with the same focus, and (3) a control group. Results indicated that students

whose preferences were accommodated in group counseling performed significantly better on a measure of career awareness than students who were mismatched.

A similar investigation analyzed the effects of matching and mismatching instructional groupings on career awareness, career decision-making, and attitudes of fifth and sixth graders according to their learning style sociological preferences (Miles, 1987). Forty students, who preferred either learning alone or with peers, were assigned randomly to two career education instructional groups that were either congruent with or dissonant from their diagnosed preferences. Results demonstrated that matching of sociological preferences with complementary grouping patterns increased career awareness and career decision-making knowledge.

...matching of sociological preferences with complementary grouping patterns increased career awareness and career decision-making knowledge.

Clark-Thayer (1987) examined the relationship of study skills and learning styles to college achievement. A sample of 231 college freshmen were administered the *Survey of Study Habits and Attitudes* and the *Productivity Environmental Preference Survey* (Dunn, Dunn, & Price, 1982). Correlations for learning style and study habits, and attitudes toward achievement were low, although significant. The researcher cautiously concluded that good students appear to be motivated and responsible, prefer to learn alone rather than with peers, prefer the flexibility and variety of learning in several ways, and do not prefer to learn through the tactile modality. The four best discriminators between successful and unsuccessful students were responsibility, flexibility, not tactile, and delay avoidance.

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Spiegel (1986) investigated the impact of congruently versus incongruently worded empathy training instructions matched and mismatched to college freshmen students' Jungian perception preference of sensing or intuitive as measured by the *Myers-Briggs Type Indicator* (Myers, 1978) on ability to identify others' overt and covert feelings.

Although results showed no significant interactions between sensing/intuition and type of training instruction, the general trend was that participants learned better in incongruent conditions, suggesting that empathy skills are developed better through the non-preferred modality.

Future Research

Future research is needed to isolate each of the 22 learning style variables to ascertain the effect on counseling outcomes. A number of researchers have emphasized the importance of including personal characteristics, such as learning style and personality traits, as independent variables in conducting research on the effectiveness of various counseling methods.

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Rosenthal (1977) studied the effectiveness of various counselor training approaches on trainees with low versus high conceptual levels. He concluded that "comparing the results of one training method without considering trainee characteristics and learning style, as well as multiple assessment of skills, may lead to incomplete conclusions on the effectiveness of these methods" (p.236). Similarly, Kivlighan, Hageseth, Tipton, and McGovern (1981) investigated the effects of matching treatment approaches and personality types (task-oriented versus people-oriented) in group vocational counseling. They assert that "the literature on vocational counseling is replete with research in which no differences were found between various approaches in counseling. In most of the studies in which no differences between counseling methods were found, treatments were compared without regard to relevant personality variables of participants; the researchers implicitly made the uniformity assumption" (p. 319).

...significant improvement in academic achievement, student attitudes, and behavior results when individual learning style preferences are accommodated....

Research cited previously indicates that significant improvement in academic achievement, student attitudes, and behavior results when individual learning style preferences are accommodated through complementary teaching styles, instructional approaches, or resources. Additional experimental research needs to be conducted in the area of accommodating learning style preferences through complementary counseling approaches to determine if improved counseling outcomes are achieved.

School counselors, who have limited time and resources for conducting experimental research, might utilize the case study method. Case studies could be conducted with students by (1) keeping anecdotal notes and case notes on individual students, noting baseline data in behavioral areas such as academic achievement, attendance, attitudes toward school, etc.; (2) counseling students over a period of time using counseling interventions which are compatible with their individual learning style preferences; and (3) assessing post-counseling behavioral changes and comparing these changes with the baseline data.

Conclusion

The major purpose of this book is to provide counselors in elementary and secondary schools with information on learning styles....

The major purpose of this book is to provide counselors in elementary and secondary schools with information on learning styles to enable them to diagnose the learning style of each student, utilize counseling interventions that complement individual learning style preferences, and consult with teachers and parents regarding accommodating student learning style preferences in the classroom and at home.

Applying the learning style approach to counseling involves: (1) assessing the learning style of each student; (2) identifying patterns within the counseling caseload for grouping students according to learning style preferences, e.g., by sociological

preferences, perceptual strengths, and structure preferences; (3) interpreting learning style requirements of students for counseling purposes (Table 2) and applying complementary counseling approaches; and (4) evaluating student outcomes as a result of using the learning styles model.

This book assists counselors in operationalizing the learning style approach. Case studies are provided to assist counselors in applying the model at the elementary and secondary school level. The learning style needs of special populations (gifted, physically disabled, multicultural groups, school dropouts) are described. Descriptions of counseling programs that use learning style preferences are provided. Lastly, research studies are outlined that show evidence that utilizing the learning styles approach in teaching and counseling results in improved academic achievement, more positive attitudes toward school, and selected developmental gains such as increased career awareness.

...utilizing the learning styles approach in teaching and counseling results in improved academic achievement, more positive attitudes toward school, and selected developmental gains....

Fundamentally, providing for the individual learning style preferences of students requires no additional counselor time or resources, apart from the assessment tools. The learning style model is based on providing for individual differences among students, and counselors, perhaps more than any other group of educators, have traditionally recognized the uniqueness of each individual student. Indeed, the Ethical Standards for School Counselors (ASCA, 1984) state that "each person has the right to self-direction and self-development" and "the school counselor has a primary obligation and loyalty to the pupil, who is to be treated with respect as a unique individual" (p. 1). The learning style approach places more responsibility for learning on students; counselors who interpret learning style profiles to students find that students can use their individual strengths to adapt teaching and learning techniques.

The learning style approach places more responsibility for learning on students....

Implementing the learning style approach in counseling implies **changes**—reconceptualizing the

Within any school there are educators who find the prospect of change threatening....

Counselors should recognize the feasibility of "phasing in" the learning style model....

counseling process, beginning with student preferences and needs, and then expanding the range of counseling interventions/strategies/techniques to accommodate an array of student differences. Within any school there are educators who find the prospect of change threatening and who adhere to traditional, ingrained practices while others recognize the desirability of changes that show evidence of improved student outcomes. Counselors should recognize the feasibility of "phasing in" the learning style model, beginning with applying the model to a limited number of students and consulting with teachers who show promise of responding to individual differences within the classroom. Counselors can expand their awareness and knowledge of learning style differences by: (1) visiting schools that use the learning style approach in teaching, learning, and counseling (Dunn & Griggs, 1988; Klavas, 1990); (2) joining the Learning Style Network to receive the services described in this book; (3) reading more extensively in the area of learning styles; and (4) attending conferences, inservice workshops, and professional meetings on learning style implementation.

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Appendix A
Results of Research on Teaching Through Learning Styles

Researcher, Title, University	Population	Findings
Patricia Brennan. *An analysis of the relationship among hemispheric preference and analytic/ global cognitive style, two elements of learning style, method of instruction, gender, and mathematics achievement of tenth grade geometry students*. Ed.D. dissertation, St. John's University, 1984.	Tenth Graders	1. Neither globals nor analytics, rights nor lefts, nor males versus females achieved better by comparison. 2. A trend toward higher achievement was evidenced when the instructional approach was congruent with cognitive style.
Elsie Cafferty. *An analysis of student performance based upon the degree of match between the educational cognitive style of the teachers and the educational cognitive style of the students*. Ed.D. dissertation, University of Nebraska, 1980.	High School Teacher/Student Pairs	1. The greater the match between the student's and the teacher's style, the higher the grade point average. 2. The greater the mismatch between the student's and the teacher's style, the lower the grade point average.
Marie Carbo. *An analysis of the relationships between the modality preferences of kindergarteners and selected reading treatments as they affect the learning of a basic sight-word vocabulary*. Ed.D. dissertation, St. John's University, 1980.	Kindergarten Children	Children taught through their strongest perceptual modalities learned more easily and retained better than when taught through either their secondary or tertiary strengths (or weaknesses).

Appendix A (Continued)
Results of Research on Teaching Through Learning Styles

Researcher, Title, University	Population	Findings
Marianne Cholakis. *An experimental investigation of the relationship between and among sociological preferences, vocabulary instruction, achievement, and attitudes of New York urban seventh and eighth grade underachievers.* Ed.D. dissertation, St. John's University, 1986.	Seventh and Eighth Grade Underachievers	1. Students preferring to learn alone scored significantly higher (.01) in vocabulary achievement than the other two groups. 2. Students attained higher achievement (.01) when learning with authority figures.
Thomas C. DeBello. *A critical analysis of the effects on achievement and attitudes of administrative assignments to social studies instruction based on individual eighth grade students' sociological preferences for learning alone, with peers, or with teachers.* Ed.D. dissertation, St. John's University, 1985.	Eighth Graders	The sociological preferences of 236 students were identified and they were assigned to classes based on their preference for learning alone, with peers, or with teachers. Students wrote compositions and then experienced revision strategies that were congruent and incongruent with their learning styles. Findings revealed that peer learners scored higher (.01) when matched with the peer conferencing technique, teacher oriented learners scored higher (.01) with self-review than incongruent methods. No learning style group achieved better than any other, but a significant interaction occurred between individual sociological preferences and the matched method of revision (.001).

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Appendix A (Continued)
Results of Research on Teaching Through Learning Styless

Researcher, Title, University	Population	Findings
Thomas C. DeBello (continued).		Additionally, the attitudes of students who preferred to learn alone or with an adult were significantly more positive (.01) when they were matched with compatible techniques.
Joan Della Valle. *An experimental investigation of the relationship(s) between preference for mobility and word recognition scores of seventh grade students to provide supervisory and administrative guidelines for the organization of effective instructional environments.* Ed.D. dissertation, St. John's University, 1934.	Seventh Graders	Analysis of the relationships among the need to learn while moving, the environment in which instruction occurs, and the effect of both on word-pair recognition scores revealed that when placed into settings congruent with preference for mobility, achievement scores increased significantly.
Claudia B. Douglass. (1979, May). Making biology easier to understand. *The American Biology Teacher, 41*(5), 277–299.	High School Students	Deductive students taught through deductive biology materials and inductive students taught through inductive materials each achieved better than when mismatched.
Mary Giannitti. *An experimental investigation of the relationship among the learning style sociological preferences, vocabulary instruction, achievement, and attitudes of New York urban seventh and eighth grade underachievers.* Ed.D. dissertation, St. John's University, 1986.	Seventh and Eighth Grader Underachievers	Achievement was statistically higher and attitudes more positive in instructional conditions that matched students' identified preferences.

Appendix A (Continued)
Results of Research on Teaching Through Learning Styless

Researcher, Title, University	Population	Findings
Sheila Jaronsbeck. *The effects of a right-brain mathematics curriculum on low-achieving fourth grade students.* Doctoral dissertation, University of South Florida, 1984.	Fourth Graders	1. The ratio of rights to lefts was greater at the lower end of the achievement continuum than at the higher end. 2. Lefts achieved better than rights in the conventional control groups. 3. Rights achieved better than lefts in activity-oriented groups. 4. Rights learned better when taught through manipulatives and when skills were sequenced from the concrete to the pictorial before being taught abstractly.
Jeffrey S. Krimsky. *A Comparative Study of the Effects of Matching and Mismatching Fourth Grade Students With Their Learning Style Preferences for the Environmental Element of Light and Their Subsequent Reading Speed and Accuracy Scores.* Ed.D. Dissertation, St. John's University, 1982.	Fourth Graders	Students who preferred bright light performed statistically significantly better when tested in brightly lit areas; those who preferred reading in dim light did equally as well in a low-light setting. Both groups performed statistically less well when tested in mismatched situations.

Appendix A (Continued)
Results of Research on Teaching Through Learning Styles

Researcher, Title, University	Population	Findings
D. K. Kroon. *An experimental investigation of the effects on academic achievement and the resultant administrative implications of instruction congruent and incongruent with secondary school industrial arts students' identified learning style perceptual preferences.* Ed.D. dissertation, St. John's University, 1 985.	High School Industrial Arts Students	The perceptual strengths of 78 students were identified. A series of six lessons (two auditory, two visual, two tactual) were presented to each student, but in varying sequences. Achievement tests administered after each lesson indicated that lessons matched to students' perceptual preferences resulted in higher test scores (.01). When new information was introduced through individuals' strongest perceptual preferences, and then reinforced through secondary preferences, achievement increased further (.05).
Peter Lynch. *An analysis of the relationships among academic achievement, attendance, and the individual learning style time preferences of eleventh and twelfth grade students identified as initial or chronic truants in a suburban New York district.* Ed.D. dissertation, St. John's University, 1981.	Eleventh and Twelfth Graders	1. When matched with their time of day preferences and teacher assignment, chronic truants attended school more frequently. 2. Significant interaction occurred among degree of truancy, learning style preference and English teacher assignment, suggesting that time preference was a crucial factor in the reversal of truancy patterns.

Appendix A (Continued)
Results of Research on Teaching Through Learning Styles

Researcher, Title, University	Population	Findings
Harold MacMurren. *A comparative study of the effects of matching and mismatching sixth grade students with their learning style preferences for the physical element of intake and their subsequent reading speed and accuracy scores and attitudes*. Ed.D. dissertation, St. John's University, 1935.	Sixth Graders	Forty students, randomly assigned to two treatment groups based on either intake or no intake preferences, were administered tests in either a complementary or dissonant environment. Results, using a two-way ANOVA, evidenced that those students in an environment complementary to their preferences for intake scored significantly higher in achievement (.001) and attitude (.003) than a mismatched group.
Michael K. Martin. *Effects of the interaction between students' learning styles and high school instructional environment*. Doctoral dissertation, University of Oregon, 1977.	High School Students	Independent students achieved better in an alternative instructional environment in comparison to a traditional environment and evidenced improved attitudes toward education.
M. Martini. *An analysis of the relationships between and among computer-assisted instruction, learning style perceptual preferences, attitudes, and science achievement of seventh grade students in a suburban New York School district*. Ed.D. dissertation, St. John's University, 1986.	Seventh Graders	1. Auditory students achieved higher scores with cassette tapes than visual or tactual learners; visual students achieved higher scores with printed material than auditory or tactual learners; tactual students achieved higher scores with computer assisted instruction (CAI) than auditory or visual learners.

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Appendix A (Continued)
Results of Research on Teaching Through Learning Styles

Researcher, Title, University	Population	Findings
M. Martini (continued).	Seventh Graders	2. All students achieved higher scores with CAI than with either of the other two methods. 3. Underachievers scored higher with CAI than with either of the other two methods.
Peggy Murrain. *Administrative determinations concerning facilities utilization and instructional grouping. An analysis of the relationships between selected thermal environments and preferences for temperature, an element of learning styles, as they affect the word recognition scores of secondary school students.* Ed.D. dissertation, St. John's University, 1983.	Seventh Graders	Subjects were tested twice with a word recognition test: once in an instructional setting that was congruent with their preference and once in a dissonant environment. Students performed better in an environment that matched their thermal preferences.
Janet Perrin. *An experimental investigation of the relationships among the learning style sociological preferences of gifted and nongifted primary children, selected instructional strategies, attitudes and achievement in problem solving and word recognition.* Ed.D. dissertation, St. John's University, 1984.	First, Second, and Third Graders	1. Achievement was significantly higher and attitudes more positive when students were taught through approaches that matched their diagnosed sociological preferences. (Learning alone vs. peers vs. adults.) 2. Gifted children learned best with their peers.

Appendix A (Continued)
Results of Research on Teaching Through Learning Styles

Researcher, Title, University	Population	Findings
Jeanne Pizzo. *An investigation of the relationships between selected acoustic environments and sound, an element of learning style, as they affect sixth grade students' reading achievement and attitudes*. Ed.D. dissertation, St. John's University, 1981.	Sixth Graders	1. When students were matched with their learning style preferences, statistically significantly higher reading and attitude scores resulted at the .01 level. 2. Students who were mismatched achieved statistically significantly below the matched students.
Thomas C. Shea. *An investigation of the relationships among preferences for the learning style element of design, selected instructional environments and reading test achievement of ninth grade students to improve administrative determinations concerning effective educational facilities*. Ed.D. dissertation, St. John's University, 1983.	Ninth Graders	1. Mean reading comprehension scores of students tested in an environment congruent with their preference for an informal design were significantly higher than those of their peers tested in an incongruent setting. 2. Those who preferred a formal design performed almost as well in the informal setting because of their ability to adapt.
Rhonda Tanenbaum. *An investigation of the relationship(s) between selected instructional techniques and identified field dependent and field independent cognitive styles as evidenced among high school students enrolled in studies of nutrition*. Ed.D. dissertation, St. John's University, 1982.	Tenth, Eleventh and Twelfth Graders 169	Field independent students provided low structure and field dependent students provided high structure performed statistically significantly better when taught through complementary (matched) methods.

Appendix A (Continued)
Results of Research on Teaching Through Learning Styles

Researcher, Title, University	Population	Findings
Paul Trautman. *An investigation of the relationship between selected instructional techniques and identified cognitive style*. Ed.D. dissertation, St. John's University, 1979.	Junior High School Students	1. Whenever the instructional materials were matched correctly to the student's identified style, statistically significant academic gains were made; whenever the materials and styles were mismatched, achievement fell below that of both matched groups. 2. There is no difference between the relative achievement of analytic and global students when they each are taught through materials that match their styles.
Karen S. Urbschat. *A study of preferred learning modes and their relationship to the amount of recall of CVC trigrams*. Ph.D. dissertation, Wayne State University, 1977.	First Graders	1. Modality strengths can be identified among first graders. 2. Superior and significant results occurred when a treatment was matched to the appropriate modality. Most of the first graders in the study found it easier to learn through either a visual or a combined auditory/visual treatment than solely through an auditory approach.

Appendix A (Continued)
Results of Research on Teaching Through Learning Styles

Researcher, Title, University	Population	Findings
Joan Virostko. *An analysis of the relationships among student academic achievement in mathematics and reading, assigned instructional schedules, and the learning style time preferences of a New York suburban school's students.* Ed.D. dissertation, St. John's University, 1983.	Third, Fourth, Fifth, and Sixth Graders	Students were assigned to two periods of mathematics and two periods of reading each day for a two-year education. During the first year, each child was matched for one subject and mismatched for the other, and during the second year the subject schedules were reversed. Students whose time preferences were congruent with their class schedules achieved significantly higher in mathematics and reading than those who were not matched.
Frederick H. Weinberg. *An experimental investigation of the interaction between modality preference and mode of presentation in the instruction of arithmetic concepts to third grade underachievers.* Ed.D. dissertation, St. John's University, 1983.	Third Graders	Students who evidenced either high auditory/high visual or low auditory/low visual modalities were randomly selected and taught a subtraction unit with either matched or mismatched instructional materials. Each group of students performed significantly better on a standardized achievement test when taught through complementary strategies.

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